Interim Investigative Report

The Middlesex Retirement System
& Cambridge Financial Management

COMMONWEALTH OF MASSACHUSETTS
PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION

PERAC
Five Middlesex Avenue
Third Floor
Somerville, MA
02145
Ph 617 666 4446
Fax 617 628 4002
Web www.mass.gov/perac

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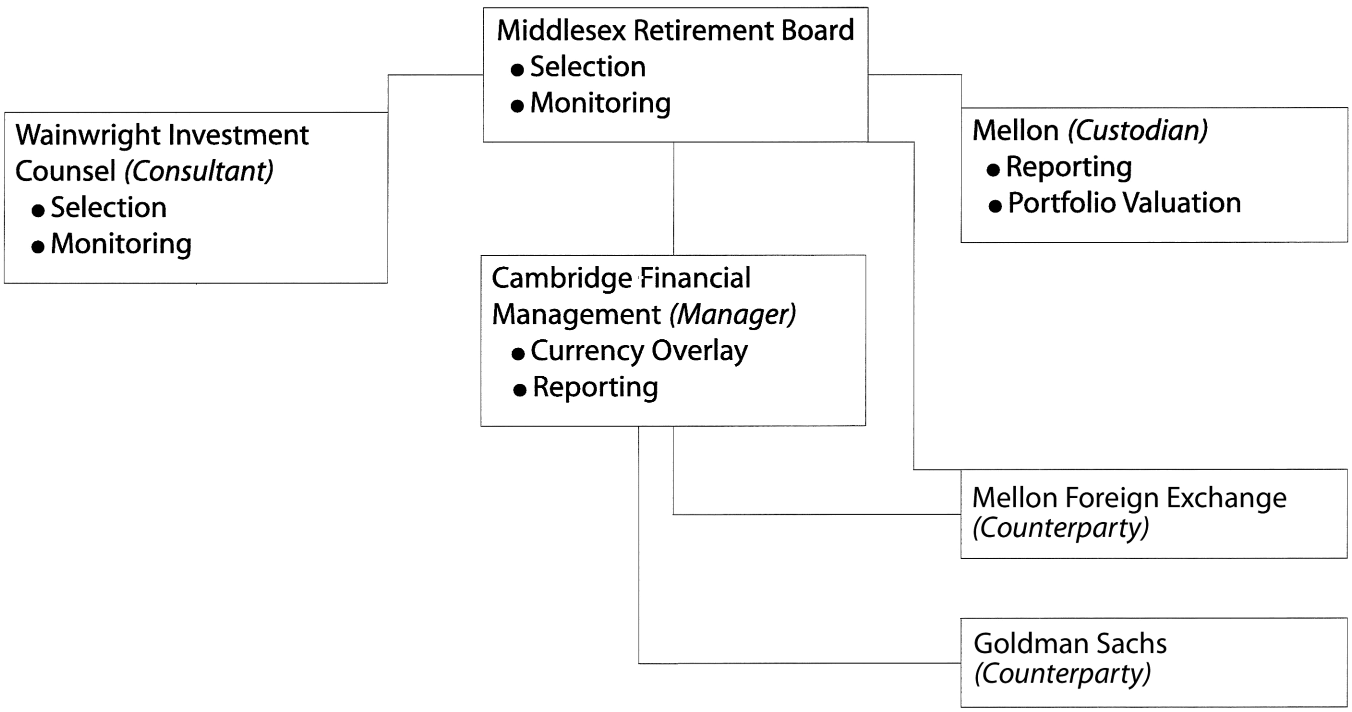
Contents

Relevant Parties

The principal parties that are the subject of this report and their various responsibilities are outlined in the following graph:



The Middlesex Retirement Board Notifies PERAC

On May 15, 2003, at the invitation of the Middlesex Retirement Board (MRB), PERAC staff met with James Fahey, Chairman, and Nancy O'Neil of the MRB; Thomas Gibson, attorney for the MRB; as well as representatives of Wainwright Investment Counsel (WIC); and the law firm of Adler & Pollack, which had been retained by the MRB; to discuss a problem with an MRB investment.

Fahey stated that a situation had arisen with respect to a currency overlay investment with Cambridge Financial Management (CFM) and Mellon Bank (Mellon). He outlined the circumstances that led to the situation as follows:

James Kneafsey, the manager of the account and principal of CFM, called Fahey on April 2 or 3 and informed him that he would not be able to attend the annual Middlesex Conference scheduled for April 7-9, as he had to go into the hospital for minor surgery. Kneafsey stated that Patricia Otis of CFM (and also his wife) would handle the account in his absence. On April 22, Fahey received a phone call from Otis, informing him that on April 21, Kneafsey had died.

On April 22-23, Fahey called Gustavos Aristizabal of WIC and Fred Bissett of A.G. Bissett, the other currency overlay firm retained by the MRB, informing them that Otis had stated that she would not be going forward with CFM. On April 28, Otis told Fahey that it was impossible for her to continue and that she would cooperate with Aristizabal and Bissett.

On April 30, Goldman Sachs (GS), counterparty on some CFM trades, contacted Aristizabal, expressing concerns about the status of certain trades. On May 1-2, Aristizabal sought information regarding the account status. On May 2, Otis informed Fahey and Aristizabal that she was aware of the status of the account but, according to Fahey, was vague as to the particulars.

On May 3, Aristizabal, Fahey, MRB Member Lawrence Driscoll, O'Neil, Gibson, Bart Early of WIC, and Saro Picciotto, CEO of WIC, met to discuss the situation—"What were the holdings and what did they mean?" The participants paired off and reviewed the Goldman data and the Mellon data. [Mellon Foreign Exchange (Mellon FX) was also a counterparty to trades made by CFM]. According to Fahey, Mellon had not yet provided all the information requested.

On May 6, Bissett had informed the MRB that he was unaware of the "mechanism" used by Kneafsey in managing the account. Fahey stated that another firm, Analytic, used a similar strategy to that of CFM. On May 6, according to Fahey, Analytic began to manage the account and executed "forward transactions that covered the naked positions and contained the parameters of the loss."

Fahey stated that the MRB "can and will unwind the positions over the course of the calendar year," and pursue legal options.

Aristizabal, Early, and Buckley stated that CFM was trading with GS and Mellon FX. Early stated that there is "not a realized loss at this point." He added that 50% of the trades in the account were through Mellon FX and, according to Early, Mellon Custody had indicated that they were valuing the account. He added that there were no CFM statements and that all information came through Mellon. Early stated that WIC's review of the account indicated that the problem began as early as 2001. In response to a direct question from PERAC staff regarding the potential for further losses, Ms. Buckley stated that the strategy put into place through Analytic would prevent further losses.

On May 21, PERAC Investment Director Robert Dennis spoke with Aristizabal and Early. They outlined a timeline of events, the nature of the immediate problem (short-dated puts owned in the account were not rolled over, resulting in a naked short position), the advice sought and received from Citibank (liquidate), Mellon's inadequate (according to WIC) pricing methods, and the fact that no one had met with CFM since the summer of 2001.

On May 22, Dennis was informed by Aristizabal that, based on WIC's recommendation, the MRB would not liquidate the account, but had instead stabilized it—after selecting Analytic to oversee the portfolio and make recommendations as to what course to follow. Aristizabal also informed Dennis that the MRB pursued currency overlay after WIC had advised against it. (We have not been able to confirm that assertion).

On May 30, Dennis called Aristizabal for an update and was informed that the MRB was looking for expert witnesses to analyze what went wrong. Aristizabal stated that CFM reports went "mostly" to Mellon and that it would take several months to input the data and analyze it. WIC still did not have a good grasp on what CFM had been doing.

On May 30, PERAC sent a letter to the MRB that, among other things, asked for a precise description of the status of the account on the date of Kneafsey's death.

At a meeting on June 9, Fahey and Gibson provided the MRB response to the PERAC letter of May 30. With respect to the precise description of the account status as of the date of Kneafsey's death, the Board stated,

> "There has been no information made available to the board or its advisors which would allow it to provide a precise description of the account on that date."

Unwinding the Cambridge Financial Management Positions

Analytic Investors began to assist in the management of the CFM portfolio in May, 2003. Their mandate was to neutralize the portfolio in order to avoid the possibility of further losses on the option positions that remained outstanding. One of the main rationales for keeping the option positions intact was that it was estimated that the MRB would gain $1-1.5 million in "time value" from some options if they were held to their expiration dates. This estimate of possible monetary gain represented the difference between what it would have cost to buy back the positions immediately and holding them to expiration if exchange rates did not appreciably change. (As options get closer to their date of expiration, the time value component of their total market value diminishes, and, since the MRB was short the options, their liability on them would decline by the decrease in time value). The MRB opted for this course, and hired Analytic to maintain the portfolio. Analytic accomplished the hedging of the portfolio's risk by employing forward currency contracts to offset the exposures represented by the option positions. According to Analytic, the fact that the options were so deep in the money made it relatively easy to contain the losses through the use of forwards. During the course of their work on the portfolio, Analytic provided weekly portfolio summaries to PERAC confirming that the account's overall liability did not appreciably change. Their role ended when the last of CFM's options was closed out on December 11.

The final loss incurred by the MRB was $36,909,655.

Public Employee Retirement Administration Commission

Chapter 306 of the Acts of 1996 established the Public Employee Retirement Administration Commission (PERAC). The Commission has responsibility for the general oversight of the activities of 106 public pension systems in Massachusetts, created pursuant to Chapter 32 of the General Laws.

In that capacity, the Commission has certain enforcement powers set forth in law. Chapter 32, Section 23 (4) provides that if the Commission has reason to believe that the investment or recordkeeping practices of a board are not being conducted "with reasonable care, skill, prudence or diligence" a Temporary Order may be issued, directing the board to take or desist from any action deemed necessary to preserve the integrity of the system. That Order will remain in effect until an investigation is concluded and a determination made as to whether the investment or recordkeeping practices of a board are being conducted "with reasonable care, skill, prudence or diligence." The statute and the regulations do not authorize PERAC to issue subpoenas or to compel the cooperation of any other party.

The Commission, at its meeting of June 11, 2003, initiated an investigation of the investment practices of the MRB as they relate to the MRB investment with CFM. That action was based on information gathered since May 15, 2003, that provided the basis for a reasonable belief on the part of the Commission "of improprieties in the investment … practices" of the Middlesex Retirement System (MRS). It is not necessary for the Commission to reach a conclusion as to responsibility in order to establish that reasonable belief. The Temporary Order to the MRB issued on June 12, 2003, directed the board to provide PERAC with documents and other information pertaining to the investment of the MRB with CFM and to immediately initiate a process for the selection of an independent vendor to conduct a fiduciary audit of the Middlesex Retirement System. In addition, pursuant to that Order, PERAC suspended review of all regulatory applications from the MRB until further notice.

In the days following the issuance of the Order to the MRB, the Commission issued Orders requesting documents and other information from a number of parties regarding the MRB investment with CFM. These included CFM, Mellon, Goldman Sachs, and others who may have possessed relevant information. PERAC reviewed the documents provided in response to the Orders, and sought responses to inquiries from the MRB, WIC, CFM, Mellon, and GS. With the exception of CFM, all parties did respond to PERAC inquiries. In light of the inability of the Commission to compel a response, PERAC staff met with Otis of CFM at the offices of her attorney in January 2004. PERAC Investment Director Dennis, as part of the review of this matter, consulted with several prominent firms that provide currency overlay services. PERAC staff also met with Fahey, Gibson, and Brian Curtin of the MRB in January 2004.

Temporary Order

On February 26, 2004, PERAC modified the Temporary Order requiring the MRB to:

1. Employ a qualified investment professional, as a full time employee of the Board, to assist the Board in monitoring investment managers, as well as in monitoring the performance of the Board's consultant and custodian and to perform other investment related tasks

2. Obtain from its custodian services that include the establishment of a screen by the custodian to determine whether or not the Board's managers are investing in accordance with the contractual guidelines agreed to by the Board and the manager

3. Cooperate with PERAC in the Commission's efforts to monitor the investment activity of the Board, including notifying PERAC of all investment-related meetings of the Board and MRB staff, and allowing a member of the PERAC staff to attend all such meetings, and

4. Complete the Fiduciary Audit initiated pursuant to the Order of June 12, 2003.

PERAC also notified the Board that the suspension of Commission review of all regulatory applications from the Board that are pending or that may be submitted to the Commission remained in effect; however, the Commission would consider emergency applications on a case-by-case basis. (PERAC had allowed the MRB to retain Analytic to unwind the CFM positions).

On July 6, 2004, the Commission authorized the MRB to commence a search for a small cap international equity manager and a midcap international manager.

On August 2, 2004, the Commission authorized the MRB to commence a search for a manager to replace Icon Advisors which had been terminated by the MRB on May 27, 2004.

On January 27, 2005, the Commission authorized the MRB to allocate assets to an SSGA Index Fund.

On February 23, 2005, the Commission rejected the request of the MRB to commence a search for a Commission Recapture vendor, due to concerns about the failure on the part of the MRB to complete the Fiduciary Audit in a timely fashion.

Developments

During the PERAC Investigation the following has taken place:

1. The MRB has been prohibited from retaining managers or investing in partnerships and trusts except under special circumstances.

2. The CFM account positions were successfully unwound without further loss.

3. The MRB has completed a Fiduciary Audit as ordered by PERAC.

4. The MRB has retained an investment professional as ordered by PERAC.

5. The MRB has acquired a position monitoring/screening program from its custodian as ordered by PERAC.

6. PERAC has monitored MRB investment-related activity through attendance at all relevant meetings and regular communication.

7. The MRB Chairman Fahey has retired and been replaced by Gibson.

PERAC made inquiries of the MRB after reviewing material provided by various parties. In many instances, responses confirm findings in this *Report,* as well as the *Fiduciary Audit* regarding confusion about the role of the MRB and its staff, WIC, CFM, and Mellon. PERAC recognizes that the MRB has been sensitive about questions that touch upon matters pertaining to ongoing litigation. Nonetheless, review of the material provided and the responses of the parties have enabled PERAC to reach the conclusions contained in this *Report*.

On 29 occasions, the MRB asserted Attorney-Client Privilege in refusing to respond to questions. Many of the instances were in response to questions regarding the MRB's compliance with PERAC Regulations. In those instances the MRB stated,

> "Throughout the period in question, the MRB was counseled by Attorney Thomas Gibson, an expert in the field of public pension law. The Board relied on the advice of Mr. Gibson with respect to compliance with all aspects of PERAC regulations 800 CMR 1 et seq. MRB is currently engaged in litigation with its custodian bank and Russell Mellon to recover losses sustained by the fund as a result of egregious breaches of contract on their part. MRB, therefore, will not waive its attorney client privileges by answering the series of questions related to PERAC regulations and the advice it received from its attorneys as to compliance."

In responding to 19 questions, the MRB cited the pending litigation between the MRB and Mellon as the reason for refusing to answer. In those instances the MRB stated,

> "MRB is currently involved in litigation with Mellon to recover damages as a result of Mellon's egregious breach of contract. Because responses to Questions 569-578 will impact upon MRB's litigation strategy, MRB respectfully declines to answer same."

Reference to other responses is made throughout the *Report*.

On September 8, 2005 Independent Fiduciary Services (IFS) presented its *Fiduciary Audit Report* to the MRB. That report had been required as part of the Temporary Order issued by PERAC on June 12, 2003.

The *Audit* makes two general observations – "(1) the need for governance enhancements (e.g., ensuring that the roles and responsibilities among board members, staff, investment consultant, etc., are clearly understood and articulated) and (2) the need for written documentation of policies, procedures and current practices."

The need to make sure that roles and responsibilities "are clearly understood and articulated" confirms aspects of PERAC's investigation which found many instances in which the MRB seemed to misunderstand the relationship that the MRB had with WIC as well as CFM. This confusion is reflected in the following responses where the MRB refers PERAC to the WIC or CFM for answers that should be readily available to the MRB:

What was the content of the review provided by WIC of the status of credit lines for CFM and A.G. Bisset referenced in the 10/22/98 minutes? (Review made to the MRB at the MRB meeting of 10/22/98). [MRB#149]

MRB – This question should be directed to WIC for response.

What was the report from WIC regarding the status of currency overlay? (Report made to the MRB at the 8/26/99 MRB meeting) [MRB#239]

MRB – This question should be directed to WIC for response.

Did CFM review the account as part of the 7/19/01 presentation? If so, how was the 10/00 through 5/01 performance explained? (CFM presentation to the MRB at the 7/19/01 MRB meeting) [MRB#476]

MRB – This question should be directed to CFM for response.

Did WIC or any officer or staff member of WIC review, negotiate or communicate in any way with the MRB or any Board member or staff member of the MRB regarding the contract between MRB and CFM? If so, please describe in detail that review negotiation and communication. [WIC#62]

WIC – No

Did WIC provide the MRB with reports regarding brokerage? [MRB #41]

MRB – No.

The Audit reviewed the MRB's compliance with law and regulations. IFS provided the MRB with a listing of statutorily and regulatory required functions and notes whether the MRB "indicates it is in compliance." IFS then "randomly compared their response to information we received in the document request or obtained during the interview process to determine whether their response was consistent with the information obtained." The *Audit,* in chart form, addresses technical compliance and states whether the MRB has stated that it is in compliance. The body of the *Audit* assesses the quality of the MRB's compliance. On the basis of the document review, interviews and random check IFS concluded that the MRB "is in compliance with most of the statutorily required provisions". In three areas, review of brokerage and transaction costs, meeting with managers, and monitoring managers the *Audit* makes clear that the MRB's compliance is not consistent with best practices.

Several findings of IFS confirm the conclusions of PERAC with respect to MRB/CFM. The *Audit* states, "During the interview process we learned that some parties are unclear regarding who is responsible for actually performing a number of statutory and regulatory mandated functions. Consequently, some required functions are not being performed." These included annual meetings with managers, monitoring of transactions costs and evaluation of manager trading practices, and ensuring that managers are in compliance with their guidelines. In fact the *Audit* states "… it is our understanding that the current investment consultant does not independently verify the manager's compliance with their guidelines." In addition the *Audit* finds, "The Board does not—and has not arranged through its staff, investment consultant or otherwise to—systematically and critically evaluate the trading practices of its investment managers." PERAC found that the MRB did not meet annually with CFM, did not monitor CFM's transaction costs, did not evaluate CFM's trading practices and did not ensure that CFM was in compliance with its guidelines. IFS found "that all material provided by the investment managers is assumed to be accurate per the investment manager guidelines." In the CFM matter this led to a failure to critically assess the data that CFM did provide to the MRB and WIC. In reviewing the contract between the MRB and WIC, IFS found that some services needed to "prudently structure and supervise the investment program" are not in that contract. These include the lack of an "… explicit requirement for the System's investment consultant to monitor whether the Fund is in compliance with its guidelines, and whether each individual asset manager is in compliance with its guidelines …"

Staffing

The Audit found the MRB in compliance with that aspect of the PERAC Temporary Order requiring the addition of an investment staff person, however, the Audit states that the "skill set of the staff person assigned to perform these responsibilities should be enhanced."

Compliance Monitoring

The modification of the PERAC Temporary Order dated February 25, 2004 ordered the MRB to, among other things, "obtain from its custodian services that include the establishment of a screen by the custodian to determine whether or not the Board's managers are investing in accordance with the contractual guidelines agreed to by the Board and the manager."

The Audit found that State Street offers a compliance monitoring through its on-line In-Sight

System. IFS found that the MRB is not presently using that monitoring system and recommends that the MRB "develop the capabilities of staff to utilize the compliance monitoring system available through its custodian (In-Sight) and in turn implement an ongoing control program." However we have been informed that the MRB is in fact using this system and is seeking a clarification from IFS.

Recommendations

The assessment of due diligence procedures and recommendations for improvement in this area form the centerpiece of the fiduciary audit as far as correcting some of the inadequacies that were evident in the PERAC investigation. The adoption of the following recommendations and the aggressive implementation of these recommendations will address the essential problems that were revealed in the PERAC investigation of the MRB investment with CFM.

Middlesex Retirement System's
Fiduciary Audit

Recommendation Matrix

Set forth below are summaries of all recommendations from IFS' Fiduciary Audit Report to the Middlesex Retirement System. They are listed in the order they appear in the report. The Task Area of each recommendation or related series of recommendations is set forth for ease of reference.

#	Recommendation	Board Action (Adopted (A) or Rejected (R))	Party Responsible for Implemen-ting	Target Date to Complete Implemen-tation	Date Completed
I. Organizational Structure and Resources					
A. Nature and Functions of Board and Committees					
1. Statutory Duties of Board					
1	IFS recommends that the Board direct staff to review each of the investment manager contracts to make certain that the contracts contain at a minimum all of the contractual components required by 840 CMR 16.02.				
2	IFS recommends that the System direct legal counsel to develop and utilize a model contract which contains all of the statutorily required provisions.				
3	IFS recommends that the Board direct staff to develop and implement a compliance checklist for each investment manager's file to ensure all the required information has been received and is up to date (e.g., current ADV on file, required acknow-ledgements have been made, required disclosures have been provided, etc.).				
2. Overview of Staff Duties (only cursory review requested)					
4	IFS recommends that the System enhance the skill set of the staff responsible for monitoring its investment related service providers either by providing staff additional training or by the addition of another staff person with more developed investment skills.				

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B. Consultant's Duties					
5	IFS recommends that the Board review, revise and enhance the contract with the System's investment consultant to (a) ensure that the contract reflects the functions its investment consultant is expected to perform, (b) where considered appropriate, incorporate "model" provisions (see Report for list), and (c) ensure that the contract is protective of the best interests of the MRS and its beneficiaries and participants.				
C. Lines of Authority					
6	IFS recommends that staff review prior minutes, document all delegations of authority, compile the delegations into one document, categorize the delegations by subject matter, and date them based on the Board approval date. The compilation of delegations should then be presented to the Board for its review and ratification.				
7	IFS recommends that the Board direct staff, with assistance from service providers, to develop a standard operating procedures manual.				
D. Relationship of Fund Assets and Operations to Plan Sponsor					
8	IFS recommends that the statutory enabling language governing the MRS be amended to clearly state that all assets of the System are held in trust.				
II. Legal Matters					
B. Legal or Statutory Provisions that Constrain Performance					
9	IFS recommends that PERAC and the System work together to ensure that PERAC's oversight authority does not constrain the trustees' ability to perform their fiduciary responsibilities.				
C. Securities Class Action Litigation Policy					
10	(a) IFS recommends the Board adopt a securities litigation policy which addresses				

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	the process the System will use to determine whether and how it should participate in securities class action litigation and to realize on claims. (b) IFS recommends that the securities litigation policy articulate who has responsibility for making securities class action case assignments, as well as the process used for making such assignment.				
D. Use of Legal Counsel					
11	IFS recommends that the Board adopt a policy which calls for the use of outside counsel in matters requiring legal advice regarding the actions of MRS Board members.				
12	IFS recommends that the Board use an outside law firm to review and negotiate the terms of real estate and private equity participation agreements.				
E. Conflicts of Interest and Ethics Policies					
13	IFS recommends the Board adopt an internal Code of Ethics which interprets the provisions of Chapter 268A and 268B of the Massachusetts General Law as well as the PERAC regulations as they apply to the specific nature and needs of the System. (The current Educational and Policy should be incorporated into the System's Code of Ethics, if adopted.)				
14	IFS recommends that Board adopt a process requiring Board members and employees to annually make the following certifications: • They have read and understood the Massachusetts Conflict of Interest Law (and if adopted, the System's internal Code of Ethics); • They acknowledge that they are subject to the Massachusetts Conflict of Interest Law and, if				

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	adopted, the internal Code of Ethics; and • They have complied with all requirements of the Massachusetts Conflict of Interest Law (and if adopted, the internal Code of Ethics), including all reporting and disclosure requirements.				
15	IFS recommends that the Board designate an "ethics compliance officer" to respond to questions regarding the Massachusetts Conflict of Interest Law (and if adopted, the internal Code of Ethics) and to monitor financial disclosures to ensure Board members and staff are in compliance.				
III.	**Fiduciary Liability Insurance (Cursory Review)**				
16	IFS recommends that the Board seek to obtain a written explanation from its insurance broker of the fiduciary liability insurance policy bid process and a certification that the premium was determined through an open, competitive process.				
17	The Board should seek clarification of the meaning and effect of Endorsement No. 3 of MRS's fiduciary liability insurance policy because it arguably might be construed as sharply limiting coverage.				
18	In light of the fiduciary liability insurance policy's exclusion for physical injury to property, the Board should evaluate the extent to which the System is adequately protected against liability for claims concerning any real estate properties that it owns through separate accounts. This could include, for instance, evaluate whether properties owned through separate accounts are sufficiently insured and owned by legally effective title holding corporations or similar entities.				

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IV. Investment Policy					
19	The Board should develop additional investment objectives and benchmarks for the Total Fund (Total Fund Policy Index and Total Fund Asset Allocation Index) and for each asset class and document them in the IPS.				
20	IFS recommends that the IPS more fully describe and clarify the System's risk tolerance.				
21	IFS recommends that the IPS include a requirement to conduct asset allocations at specified intervals, e.g., at least every three-five years.				
22	IFS recommends that the IPS be expanded to include broad investment guidelines that apply to all (or most) investment managers.				
23	IFS recommends that the Board develop a well articulated supplemental policy regarding derivatives for inclusion in the IPS.				
24	IFS recommends that the IPS set forth the Board's proxy voting policy for domestic and international equities (or reference a separate proxy policy document).				
25	IFS recommends adding a policy on securities lending to the IPS.				
26	IFS recommends adding a policy on brokerage practices to the IPS, which acknowledges that commissions are a plan asset and, as such, the Board will monitor commission and other trading expenses.				
27	IFS recommends that the Board be required to review the IPS and investment guidelines and procedures on an annual basis – with the assistance of its consultant and investment staff.				

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V. Asset Allocation					
D. Re-Balancing Process					
28	IFS recommends that the rebalancing policy in the IPS be revised so that if an asset class falls outside the approved policy range, the System is required to rebalance. Rebalancing should be required on a periodic basis, e.g., quarterly, or whenever the asset class falls outside the policy range. Rebalancing should bring the allocation back within the approved range (but not necessarily to the middle of the range or target), unless the Board votes not to follow its policy under extreme or unusual circumstances.				
E. Review of Consultant's Asset Allocation Study					
29	IFS recommends that the System reexamine its asset allocation to determine whether either (a) the asset allocation needs to be changed to meet the actuarially assumed rate of return or (b) the actuarially assumed rate of return should be adjusted downward to be consistent with the results of the study. In addition, IFS recommends that the System conduct an updated asset allocation (or preferably an asset liability) study.				
A. Suitability in Light of Investment Policy and Asset Allocation					
4. Private Equity and Real Estate Structure					
30	IFS recommends that the System, with assistance from its consultant, develop investment plans for private equity and real estate to formalize the diversification strategy and investment structure goals. [See Section XIV.]				
B. Use of Active vs. Passive Asset Management					
31	IFS recommends the System discuss with its investment consultant the use of passive equity investment strategies as part of its ongoing investment program and identify				

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	portions of the equity and/or fixed income program that may be conducive to such a management approach.				
D. Number of Managers					
32	IFS recommends that the Board continue its efforts to decrease the number of investment managers it utilizes.				
VII. Retainer Consultant's Responsibilities					
A. Fiduciary Status					
33	IFS recommends that the Board require that its investment consultant(s) acknowledge that it is a fiduciary and has fiduciary responsibility for the advice and recommendations it provides.				
B. Retainer Consultant's Scope of Work					
34	IFS recommends amending the investment consultant's contract to specifically address the services the Board requires to assist it in performing its duties and responsibilities.				
35	IFS recommends that the Board periodically (e.g., annually or at least bi-annually) assess the performance of its investment consultant, including (a) whether it is providing the services stipulated in the contract and (b) whether the level, quality, and value of the investment consultant's services are acceptable.				
C. Conflicts of Interest					
36	IFS recommends the Board work with the System's legal counsel to establish a schedule for periodic written representations from the investment consultant stating the total compensation received, both directly and indirectly, by the consultant during the prior year from the Fund, as well as all related sources, if any, including, but not limited to, investment managers the systems employs, the commission recapture provider(s)				

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	and/or any broker/dealer affiliates of the investment consultant. [See the June 1, 2005 S.E.C Publication entitled "Selecting and Monitoring Pension Consultants: Tips for Plan Fiduciaries" at www.sec.gov/investor/pubs/sponsortips]				
37	IFS recommends that the Board impose an affirmative obligation on its investment consultant to disclose any business relationships that exists with any managers or service provider its recommends.				
D. Actual Performance vs. Contractual Requirements					
38	IFS recommends that the Trustees contractually require the system's investment consultant to monitor investment manager performance against the written guidelines and report in writing to the Trustees quarterly, or more often if there are significant departures from those guidelines.				
E. Reasonableness of Fees					
39	IFS recommends that the Board periodically (at least every three to five years) issue an RFI for investment consultant services.				
IX. Investment Performance Reporting					
A. To Board					
1. From the Custodian					
40	IFS recommends that the System create a mechanism going forward to link the historic returns calculated by the previous custodian.				
41	IFS recommends that if the System has concerns about using data provided from the previous custodian, the System should consider requesting AIMR PSS® compliant or GIPS® compliant historical returns from each investment manager. These returns would allow the trustees to make a true apples to apples comparison.				

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42	IFS recommends that if the System has concerns about using data provided from the previous custodian, the System should consider requesting AIMR PSS® compliant or GIPS® compliant historical returns from each investment manager. These returns would allow the trustees to make a true apples to apples comparison.				
2. From the Consultant					
43	IFS recommends streamlining and standardizing the investment reporting time periods for all the asset classes.[1]				
44	IFS recommends that System require the investment consultant to add an exhibit to compare the current market value of the portfolio to the previous quarter.[2]				
45	IFS recommends adding an exhibit, such as a pie chart showing the asset allocation for each assets class, i.e. domestic equity, domestic fixed income, international equity, international fixed income, real estate, and private equity and a chart showing how it has changed since the previous quarter. [3]				
46	Contingent on the adoption of IFS' recommendation to link historic returns, IFS recommends that the System request to see performance for the total fund, its segments, and individual investment managers over consecutive periods such as one year (example, returns for one year periods such as 1999, 2000, 2001, 2002, etc). [4]				

[1] Streamlining the returns will add more value to exhibits by helping the board see how different asset classes performed over the same time period.
[2] This would help the trustees see what asset classes experienced the biggest gain or loss over the previous three months.
[3] This exhibit will enable the trustees to quickly identify which managers make up a particular asset class and how much each manager is allocated as a percentage of the asset class.
[4] This will allow the trustees and staff to see on annual basis how the total fund, segments, and investment manager performed during a given market environment. It will also strengthen the board's ability to evaluate an investment manager long term performance by

#	Recommendation	Board Action (Adopted (A) or Rejected (R))	Party Responsible for Implemen-ting	Target Date to Complete Implemen-tation	Date Completed
47	IFS recommends that the System require the investment consultant to compare the total fund and policy index in a universe against other public pension plans on both a cumulative and consecutive year basis. An appropriate time period would be one-quarter, one-year, three-year, five year and ten-year periods.[5]				
48	IFS recommends that the System require the investment consultant to compare individual asset classes in a universe against other public pension plan investments.				
49	IFS recommends that the System require the investment consultant to compare investment managers in peer group universes based by investment style.[6]				
50	IFS recommends that the System require the investment consultant to include a style-based analysis including the total equity segment and to each individual investment manager. At a minimum, the System should require the investment consultant to include an equity map representing the current holdings, and if possible an equity domain map showing how any "drift" that has occurred from the changes in holdings over time.[7]				
51	IFS recommends that the System require its investment consultant to provide an exhibit detailing the Total Fund's equity segment with the rest of the summary statistics.				

evaluating the manager over various points in the market cycles. MRS should revisit the appropriate benchmarks for each investment manager and then consistently apply the same benchmark for all reporting exhibits.

[5] This will enable the trustees and staff to evaluate the performance of their fund relative to other public pension plans.

[6] This will give the trustees and staff a better understanding of how their manager is performing compared to alternative managers in the same asset class.

[7] This will allow the trustees and staff to see what if any bias in growth/value, small cap vs. large cap the fund's equity segment has experienced over time.

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52	IFS recommends that the System require its investment consultant to provide an additional exhibit known as a "common holdings matrix" to show any overlap in investments between equity managers.				
53	IFS recommends that the System require the investment consultant to verify the accuracy of the information provide by the managers, if possible. [8]				
54	IFS recommends that the System require the investment consultant to create a mechanism to evaluate the Total Fund, as opposed to just individual investment managers.				
55	IFS recommends that the System require the investment consultant to include in the performance book a risk and return analysis for the Total Fund, each asset class, and each investment manager.				
B. To All Stakeholders					
56	Since the annual report is not distributed to all stakeholders, IFS recommends that the Board require that the first quarterly newsletter of each year, which is provided to the members of the System, contain a section that disclosures information regarding the prior years investment performance, including, but not limited to, the current funded ratio, the asset allocation and how its has changed since the prior year, summary performance for the total fund compared to a policy index and an asset allocation index, and universe comparisons on a cumulative and consecutive basis for the total fund, each asset class and each manager, with benchmarks and appropriate style specific peer groups and indexes where applicable.				

[8] The new investment manager quarterly update requires acknowledgement that the manager is in compliance with the manager's guideline. However, to the best of our knowledge, there is currently no cross verification.

#	Recommendation	Board Action (Adopted (A) or Rejected (R))	Party Responsible for Implemen-ting	Target Date to Complete Implemen-tation	Date Completed
X. Performance Benchmarks					
1. Appropriateness of Benchmarks – By Asset Class and Total Fund					
57	IFS recommends that the System use the Russell 3000 Index to measure the performance of the domestic equity segment of the total portfolio.				
58	IFS recommends that the System use its current blended index as an asset allocation index to evaluate how the System's strategic bias has affected the portfolio's return relative to the rest of the domestic equity market				
59	Based on the System's current allocation, IFS recommends that the System begin comparing the international equity segment against the MSCI All Country World Index ex US (ACWI ex-US). [9] This new index will allow the Board to assess how its strategic bias (towards emerging markets) has helped or hindered the performance of the portfolio.				
60	IFS recommends that the System use the Lehman US Universal Index to measure the performance of the domestic fixed income segment of the portfolio.				
61	IFS recommends that the System convert the custom benchmark it currently uses for domestic fixed income to its asset allocation benchmark.				
62	IFS recommends that the Board reevaluate the benchmark it currently uses to measure hedge fund performance.				
63	For purposes of measuring Total Fund performance, IFS recommends replacing the customized benchmark with a policy index – a benchmark composed of broad based indices for each asset class.				

[9] The MSCI ACWI is made up of 48 developed and emerging countries excluding US equities. The current make up of the index is 90% developed and 10% emerging markets,

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XI. Due Diligence Procedures					
A. External Manager Selection Process					
64	IFS recommends that the Board request the development of a manual containing disciplined policy and procedure sections addressing selection, hiring, and monitoring external investment managers for their use and the use of the staff.				
B. Monitoring of Accounts					
1. Adequacy Of Guidelines[10] (including clarity and thoroughness by asset class and strategy)					
65	IFS recommends that the Board require its investment consultant to review all manager guidelines and update where appropriate to ensure that all guidelines contain the necessary provisions.				
66	IFS recommends that the System ensure that all investment manager guidelines include the "Guideline Compliance Policy" provision.				
XII. Cost and Fees					
B. Interrelationship of level of asset management fees with number of managers, based on a representative sample asset subclass and key methodologies and criteria for determining reasonableness of number of managers					
67	IFS recommends that the Board review its current large cap equity structure with its consultant and determine whether or not it is advisable to reduce the number of managers.				
XIII. Evaluation of Brokerage and Trading Practices					
A. Procedures for Evaluating Commission Recapture					
68	IFS recommends that the Board work with its investment consultant to develop a policy that details the how, when and by whom the investment program is monitored and reconciled.				
69	IFS recommends that insofar as the System's investment consultant is capable				

Based on representative accounts for domestic and international equities, fixed income securities, real estate, and at least one account that gnificantly employs derivatives

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	of prudently and objectively providing advise regarding the System's commission recapture program and monitoring such program, the Board should amend the investment consultant's contract to provide for such services				
70	The Board should explore the feasibility and cost/benefit of using its internal staff to reconcile commission recapture reports from the System's recapture agent(s), the custodian and investment managers involved versus the investment consultant.				
B. Procedures for Evaluating Soft Dollar Practices					
71	The Board should explore with its investment consultant its ability to assess the trading practices of the System's investment managers and the extent to which the managers (and the brokers they select) achieve best execution.				
72	Insofar as the Board's investment consultant is capable of performing an evaluation of trading practices, it should do so both in the context of manager search and ongoing monitoring of the managers.				
73	Insofar as the Board arranges with the Board's investment consultant to assess the trading practices of the System's investment managers, the applicable consulting agreement should be amended accordingly.				
74	The Board should adopt written policies and procedures governing brokerage and trading practices by investment managers and by the trustees and staff.				
XIV. Controversial Investment Practices					
A. Derivative Strategies and Hedge Funds					
75	IFS recommends that the System arrange through its retainer investment consultant (or another qualified consultant) to				

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	develop and observe extensive, rigorous policies and procedures regarding the System's use of derivative strategies and hedge funds. These policies and procedures should address, among other subjects, the following: • Which strategies and instruments are permissible and impermissible, e.g., relative value strategies, event driven strategies, directional and long-short strategies and macro-economic (including commodity-based) strategies; • Use of hedge funds of funds versus individual hedge funds; • The investment objectives for use of such instruments and funds; • Who on behalf of the System will perform exactly what types of due diligence regarding the selection and monitoring of every manager or fund employing derivatives or hedge fund strategies, including how to monitor each relevant, specific type of risk; and • The overall structure of the System's allocation to any such strategies.				
B. Appraised Assets					
76	IFS recommends that the System through its investment consultant (or another qualified consultant) develop and observe extensive, rigorous policies and procedures for designing and monitoring its real estate program. These policies and procedures should, at a minimum, address the following:				

#	Recommendation	Board Action (Adopted (A) or Rejected (R))	Party Responsible for Implemen-ting	Target Date to Complete Implemen-tation	Date Completed
	• The purpose and objectives of the real estate program; • Portfolio construction, e.g., types of acceptable properties (core and opportunistic or specialty) and the portions of the overall real estate program devoted to each; • Vehicles, e.g., separate accounts vs. commingled funds (open end vs. closed end); • Diversification, including, e.g., multi-family, office, retail, industrial, hotel and land; • Leverage ; • Standards for performance measurement, reporting and valuation; and • Specific forms of due diligence in selection and monitoring of each real estate account.				
2. Private Equity					
77	The System should arrange through its investment consultant or another qualified consultant to develop extensive, rigorous policies and procedures for structuring and monitoring the private equity program. These policies and procedures should, at a minimum, address the following: • The objectives and purpose of the private equity program; • Investing through only limited partnerships or similar vehicles rather than direct investing; • The exact role and duties of the investment consultant in selection and monitoring; • Minimum value of investment in any single partnership and maximum number of partnerships selected;				

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	• Specific due diligence criteria to consider when selecting a private equity partnership, including, e.g., demonstrated qualifications of the general partner, expected term, expected exit, alignment of interests between the general and limited partners, acceptable/ unacceptable legal and contractual provisions, etc.; • Overall portfolio structure, e.g., in terms of investing in early/mid/late stage venture capital, mezzanine debt, buyouts; sector and industry diversification; diversification by vintage year, etc.; and • Criteria and process for reporting returns.				
XV.	**Trust and Custody Arrangements**				
A. Cost and Fees					
78	IFS recommends that the System renegotiate its custody contract, including the fee schedule, using an investment consultant and legal counsel with specific, demonstrated experience in the negotiation of public pension fund custody agreements to assist the System in obtaining a more favorably structured and lower priced relationship.				
B. Cash Management					
79	IFS recommends that the System review the quality and competitiveness of the policies for cash management and incorporate changes as recommended into a renegotiated contract.				
80	IFS recommends that the STIF be compared to an appropriate benchmark on a net basis.[11] Further, if appropriate, a				

[11] This recommendation is distinct from our finding regarding the cash equivalent manager's benchmark.

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	change in the sweep vehicle should be made.				
C. Securities Lending – Risk, Return, Monitoring					
81	IFS recommends that the System review the volume and value added of engaging in securities lending and the reasonableness of the current income split it shares with its custody banks.				
82	If viable, IFS recommends that the System renegotiate its securities lending arrangement to enhance its income potential and protection level and to require adequate reporting of lending activity and performance.				
D. Securities Class Action Claims Process					
83	IFS recommends that the System document and adopt a formal securities class action claims process. This process should address, at a minimum, who is responsible for the following functions: • identifying settlements where the system may have owned securities during the class period; • computing the amount of the system's claim; • filing the proof of claim; • receiving and investing the proceeds, once received; • verifying the amounts received; • form and frequency of reporting to the board.				
84	IFS recommends that the System amend its agreement with its custody bank to impose securities class action processing requirements (e.g., claims processing).				
E. Ancillary Services					
1. Accounting and Investment Reporting					
85	IFS recommends that the System require that its custodian bank periodically provide its annual SAS 70 and that the				

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	System review it for significant exception issues.				
2. Compliance Monitoring					
86	The System should develop the capabilities of staff to utilize the compliance monitoring system available through its custodian (In-Sight) and in turn implement an ongoing control program.				
F. Service Capability vs. Needs of Fund, Including Adequacy of Reporting and Pricing					
87	IFS recommends that the System review the services available from the custody bank in light of the various control process issues raised throughout the Fiduciary Audit Report, and renegotiate the contract and set of services accordingly.				
XVI. Investment Accounting and Operations					
A. Investment Accounting System and "Book of Record" Issues					
88	IFS recommends that the System (or its consultant) monitor and enforce its mandate requiring monthly reconciliation between the System's custodian bank and each investment manager to ensure it occurs in a timely manner.				
89	IFS recommends that the System review its overall accounting and reporting needs relative to Quickbooks ability to handle the data, including flexibility for input and output, and if appropriate investigate more comprehensive systems for maintaining portfolio data.				
90	IFS recommends the System formalize the nature of its custodian's reconciliation and valuation process regarding the long/short account custodied "away" at the brokerage firm, including the custodian bank's duties to report results to the Board.				
B. Internal Control Framework for Paying Accounts Payable to Investment Service Providers, Based on Representative Sample					
91	IFS recommends that the System develop, adopt and implement a policy				

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	incorporating appropriate controls on review and approval of investment manager and other service provider fees.				

Order

The MRB has complied with aspects of the Temporary Order regarding the completion of a fiduciary audit, the retention of an investment professional, the purchase of a portfolio screening service from its custodian, and cooperation with PERAC's monitoring of its investment activity. The Commission is continuing its investigation of several unresolved issues. Consequently, the Order remains in effect.

Summary

Based on the PERAC Investigation, the following summary is made with respect to the actions or inactions of various parties involved in this matter. These observations, as well as conclusions made throughout the *Report,* are based on a review of material provided to PERAC. Failure to provide a response or to provide material that might support a different conclusion is the responsibility of the party from whom PERAC requested information. PERAC cannot vouch for the accuracy of the material provided or confirm that the material provided included all relevant material.

Cambridge Financial Management

CFM told the MRB that its strategy would have limited risk (limited to the premiums paid for purchased options) and that the maximum loss would be limited to 2-4% of the underlying equity assets in any year. The MRB/CFM contract provided that CFM would engage in a hedge program "to protect Middlesex from the adverse effects of a pronounced increase in the value of the U.S. dollar against one or more designated foreign currencies …."

CFM began its mandate in 1999 by performing in a conventional manner, providing currency overlay for approximately $45 million of international equity assets. However, as modest losses began to build, CFM began to deviate from its contractual mandate by writing options (March 2000) and increasing total exposures.

By 2001, the account clearly was no longer focused on currency overlay. Options were being written in huge amounts, total currency exposures were significantly higher than the value of the underlying equity assets and had no relation to the currency exposures in the underlying assets, and trading volume was egregiously high. Well over $110 billion in options positions were established through the life of the account. The CFM account throughout much of its existence was in violation of the PERAC Supplemental Regulation approved on July 28, 1999:

> "Currency futures, currency options (puts and calls), and forward currency contracts may be written against securities in the international equity portfolio to a benchmark level of 50% of market value with the authority to go up to 100% if deemed appropriate during temporary market conditions."

The final sentence of the Supplemental Regulation includes the following:

> "Speculative currency positions or trades unrelated to underlying portfolio holdings are strictly prohibited".

CFM provided prices to Mellon that were used by Mellon as the sole source for portfolio evaluation purposes. Beginning in 2001, prices of purchased options began to be falsified by CFM. Exaggerated prices led to fictitious and increasingly large entries for "unrealized gains" on monthly reports. Prices of written options were valued at cost rather than market until March 2002. As of March 31, 2003, purchased and written options were mis-priced by a combined $37 million.

Probably the most egregious markup in the March 2003 portfolio was on 30,000 puts on the Swiss franc with a $1.42 strike price that was purchased on March 25 and would expire on April 3. During the course of only four trading days, during which the currency apparently strengthened slightly (which would, other things being equal, cause the value of the put to decline), the value of the contracts (as reported by Mellon and CFM) rose from $33,000 to $1,245,000.

Similarly, 45,000 put options on the Euro purchased on March 25-27, expiring on April 16, were marked up from $118,500 to $1,584,000, even though the currency was strengthening during the last few days of the month and, since the Euro was at $1.09 and the put was at $1.04, the contracts were well out of the money and would have been worth very little.

As a further example, a Euro call with strike price $1.25, purchased on March 7 that was due to expire on April 2, was inexplicably marked up from $84,000 to $396,000 even though with the currency at $1.09, the contracts were about to expire worthless.

CFM did not report on portfolio strategy or performance, either in written or oral presentation, to MRB or WIC between July 2000 and July 2001 and not at all from July 2001 until the account's demise.

Beginning in 2001, options were being written at an increasingly frantic pace. While proceeds from the written options served to hide the accumulated trading losses from a cash flow point of view, CFM's fraudulent reporting of option prices to Mellon for evaluation purposes served to hide the losses from an accounting perspective.

Middlesex Retirement Board

The MRB failed to make sure that Mellon was set up to account for the CFM account using fair market values for portfolio pricing.

In written reports received from CFM in July 2000 and, in particular July 2001, the MRB failed to see or respond to warning signs that the account was not doing well, that performance was being propped up by unconventional means, and that CFM's trading activity was in violation of a number of account guidelines.

Similarly, MRB failed to take note of warning signs that might have been evident from close scrutiny of Mellon's monthly custodian reports.

After July 2001, and continuing through CFM's demise, MRB failed to request performance and strategy reports from CFM, either in written format or in direct presentation to the Board. These failures marked a clear violation of PERAC regulations.

The MRB failed to comply with a number of PERAC Regulations, as noted in the *Report*.

The MRB did not require that CFM provide a "comprehensive written quarterly report which included a review of investment performance, including a review of the investment manager's relative performance, a review of the system's investments and a report on the investment manager's current outlook or forecast as well as strategy for the future."

The MRB did not meet annually with CFM.

The MRB did not monitor trading costs specifically with respect to the CFM account.

The MRB contract with the WIC included language that effectively indemnified WIC, in violation of prohibitions on such terms.

The MRB failed to adequately monitor the CFM account and thus did not determine that throughout much of its existence, the account was in violation of the PERAC Supplemental Regulation approved on July 28, 1999, as well as the contract between the MRB and CFM.

A report produced by Mellon analyzed the custodian's quarterly charges for settling trades on behalf of MRB's various managers. If these reports had been analyzed, they would have shown that, beginning in the second half of 2000, the costs for settling CFM's options trades on behalf of MRB had risen to more than 25% of the system's total transactions costs for which Mellon imposed an additional charge, a wholly inappropriate level for a conventional currency overlay account.

Wainwright Investment Counsel

WIC failed to make sure that Mellon was set up to account for the CFM account using fair market values for portfolio pricing. On at least one occasion, WIC received information from Mellon that indicated that Mellon was not independently pricing the CFM holdings.

WIC failed to notice or follow up on warning signs and red flags contained in the July 27, 2000, and, particularly, the July 17, 2001 CFM reports submitted to MRB. The July 27, 2000 report indicated that CFM had begun to write options in March, that cumulative trading losses were being incurred, and that the account was trailing its benchmark. It also contained a frank admission by Kneafsey that the "erratic" and "atypical" behavior of the currency markets was not conducive to his strategy being successful.

The July 17, 2001 CFM report failed to relate the currency exposures in the overlay account to the underlying equity portfolios, offered no information at all on actual positions or exposure, indicated that month-to-month performance was extremely erratic, and gave no explanation as to what strategies or trades were responsible for the unusually high gain reported as of June 30. In fact, that gain was largely due to the infusion of $5.8 million in premiums from options written and was also a reflection of CFM beginning to falsify valuations of options.

By its own admission, WIC relied on the bottom line performance and market value numbers provided in Mellon's monthly reports in order to conclude that nothing was amiss in the CFM account. However, it is expected that a consultant will undertake a more detailed analysis of the data provided, and, in this case, that does not appear to have occurred.

A careful look at the information beyond the bottom line figures on the first page of the monthly Mellon custodian reports would have clearly indicated that the account was engaged in an inappropriate level of trading activity, and that total exposures were far in excess of and had little relation to the underlying assets. By 2001, total gross value of the options positions were typically in excess of $1 billion, and actual exposures, taking into account "delta" factors, were in excess of $200 million (and as high as almost $500 million) compared to the underlying equity assets of about $40 million. Even netting out offsetting positions, actual effective exposures often exceeded $100 million. On a more basic scale, a simple analysis of average position levels would have shown that CFM's average option position was $4 million at year-end 1999, rose to $12 million by year-end 2000, and spiked to $25-35 million for the duration of the account.

In March 2001, information on the first page of the monthly reports showed that, without any major change in the currency markets or explanation from CFM, the entry for unrealized gains began to suddenly increase by significant magnitudes. What was actually happening was that CFM was inflating the value of the priced options in order to have the reported unrealized gains always exceed the realized losses that were accumulating, resulting in the appearance of a positive net value of the account. These losses were also reported prominently in the monthly reports, but, unlike the gains, they were accurate.

Careful analysis of the monthly custodian reports would have also raised questions about the validity of the pricing of the options in the portfolio. Purchased options were often priced at huge, unrealistic multiples of purchase price within days of the date of trade, even as the actual value of these options often was declining due to currency movements and/or declining time value. Written options were not marked to market at all until March 2002. When the written options began to be priced, the values provided by CFM were consistently and substantially inflated, similar to the practice on the purchased options.

As is evident within the monthly portfolio reports, the increasingly huge volume of written options ($12.5 million as of year-end 2001 and $23.6 million by year-end 2002) was clearly contrary to CFM's original stated strategy, in violation of the original account guidelines, in violation of the PERAC Supplementary Regulation, and totally inconsistent with the expectations of conventional currency overlay activity. Since the written options were typically "in-the-money" and the purchased options were "out-of-the-money", nearly all of the effective currency exposures in the overlay account were represented by the written options. By indicating CFM's need to raise increasingly large magnitudes of money by essentially borrowing, the increasingly large magnitude of written options should also have been a clear red flag that something was amiss.

If the positions in the monthly custody reports had been analyzed beginning in 2001, they would have shown no consistent pattern month to month. The totally erratic nature of the currency exposures was inconsistent with either the underlying equity holdings or the generally directionless nature of the currency markets. Also, while a currency overlay manager would typically execute a "bet" by simply purchasing a put or call on a particular currency relationship, the reports indicated that CFM's activity began to reflect a highly unconventional practice of having four distinct positions (long puts, long calls, short puts, short calls) for each currency. If indeed CFM had specific strategies it was seeking to implement in the currency market, it could have executed these strategies with much lower volume of trading and a simplified, more conventional portfolio structure.

Another report produced by Mellon analyzed the custodian's quarterly charges for settling trades on behalf of MRB's various managers. If these reports had been analyzed, they would have shown that, beginning in the second half of 2000, the costs for settling CFM's options trades on behalf of MRB had risen to more than 25% of the system's total transactions costs for which Mellon imposed an additional charge, a totally inappropriate level for a conventional currency overlay account.

From July 2001 through the time of the account's demise, WIC never requested any written strategy discussions or performance reports from CFM and never requested any meetings with CFM, either at WIC's office, CFM's office, or at an MRB board meeting.

WIC failed to adequately monitor the CFM account and thus did not determine that throughout much of its existence the account was in violation of the PERAC Supplemental Regulation approved on July 28, 1999, as well as the contract between the MRB and CFM.

Mellon

Since the function of the custodial bank is to execute and track clients' trades, not to question or analyze them, Mellon had no obligation to bring the drastically changed and very frenetic trading activity of CFM to the attention of either WIC or MRB. The bank was justified in assuming that both entities were aware of and approved of the trading activity. However, throughout the life of the account, Mellon accepted CFM's month-end pricing to use in portfolio evaluation. Despite the fact that Mellon's trading desk was a major dealer in the currency markets and had also executed about half the trades, the bank made no effort at any time to systematically question the veracity of the prices submitted by CFM. Mellon also could not or did not produce an exception report to highlight unusually large changes in daily valuation. Whether or not Mellon was contractually bound to have validated the pricing is the major contention in the lawsuit currently proceeding between MRB and Mellon. However, with respect to a client of Mellon's who also invested through CFM, independent valuations appear to have been performed until that client specifically instructed Mellon to use CFM's values.

Mellon officers and employees responsible for servicing the MRB custody account received substantial payments under an incentive plan for introducing CFM to Mellon FX. This arrangement raises an issue of conflict of interest between the duty owed to the MRB in providing custody services and the personal interest of the officers and employees in obtaining financial remuneration for such introductions. That arrangement raises the possibility that those officers and employees approached the CFM account differently from other MRB accounts. The perception was certainly created that, because of the incentive payments, the CFM account was different than other MRB accounts. It also created the perception that, regardless of whether or not a formal responsibility to do so existed, those officers and employees would be less likely to inform the MRB of problems, issues, or anomalies in the CFM account than would have been the case in the absence of such payments.

In trading with CFM Mellon FX regularly increased trading limits and thereby enabled CFM to trade in amounts that far exceeded what would be expected for the mandate in the MRB/CFM contract. In several instances, trading limit increases were necessitated by CFM exceeding existing limits by significant margins. The record indicates that CFM was consistently exceeding trading limits that were established and Mellon FX increased those limits without communicating with the MRB, the party with whom Mellon FX had an existing FEOMA agreement.

The credit capacity established by these limit increases supported the frenetic trading activity that CFM engaged in from late 2001 to March 2003. It is during this period that the losses to the MRB dramatically increased.

Goldman Sachs

In trading with CFM, GS on several occasions increased foreign exchange limits and thereby enabled CFM to trade in amounts that far exceeded what would be expected for the mandate in the MRB/CFM contract. In several instances foreign exchange limit increases were necessitated by CFM exceeding existing limits. GS did not inform or communicate with the MRB or WIC concerning the limits. GS documents indicate that CFM on several occasions exceeded foreign exchange limits that were established and GS increased those limits without communicating with the MRB, the party with whom GS had an existing FEOMA Agreement.

The credit capacity established by these limit increases supported the frenetic trading activity that CFM engaged in from late 2001 to March 2003. It is during this period that the losses to the MRB dramatically increased.

Returns from international investing are derived from two primary sources—the changing values of the securities (stocks or bonds) and the changing relationship of the underlying currencies to the US dollar. Currency overlay is a strategy aimed at managing the currency exposure separately from the underlying securities. It is a widely used and accepted strategy that is intended to limit risk.

For US investors, the main risk to their international investments is when the dollar strengthens. When this happens, it takes fewer dollars to purchase a single unit of a particular foreign currency and investors will correspondingly receive fewer dollars when investments are translated from the local currency back to the dollar.

Conversely, US investors benefit from a falling dollar, as they receive relatively more dollars per local currency at the time of valuation or liquidation. For instance, in 2003, a year of dollar weakness, the MSCI-EAFE Index was up 18.4% as of September 30 in US dollar terms, but only 10.1% in local currency terms.

In a recent *Wall Street Journal,* the spot (actual current) price of the Euro was $1.3170. For expiration in May, the option premium for a call at the strike price of $1.3350 was $.01, and the premium for a put at that strike price was $.0246. The cost of the right to purchase 1,000,000 Euro at expiration date at $1.335 is 1,000,000 x $0.01= $10,000. This is the purchaser's maximum exposure; he can't lose more than the $10,000. He will profit if the Euro closes above the strike price in dollar terms; his profit is reduced by the premium paid. The counterparty that wrote the contract has an open-ended risk. If the Euro settles at or below the strike price in dollar terms, he pockets the $10,000, but if it rises above, he loses. For instance, if it closed at $1.37, he would lose $25,000 (($1,370,000-$1,335,000) less the $10,000 premium received).

For the put, the purchaser pays $24,600 for the right to sell 1,000,000 Euro at the price of $1.335 at expiration in May. Since the strike price is higher than the spot price, it is logical that it would cost more for the right to sell at the strike price than the right to buy. The purchaser's maximum exposure is the premium of $24,600, and he will profit if the Euro closes lower in dollar terms. For instance, if the dollar/Euro is $1.31, he has a right to sell his Euros for $1.335 each; his profit is reduced by the premium paid. The counterparty ("writer") has an open-ended risk. He pockets the $24,600 if the dollar/Euro closes above $1.335, but if it closes at $1.29, he loses $20,400 ($1,335,000-$1,290,000) minus the $24,600 premium received).

The maximum loss to the purchaser of either the put or the call is the premium (option price) paid while the potential gains are unlimited. Since the opposite is true for the writer of options, the writer will often execute offsetting transactions in order to hedge or limit the risks of loss.

Currency should not be considered an asset class, since its constituents are so diverse and uncorrelated and since there is no expected return associated with its risks. Currency reflects exposures that are side effects of international investing and which may "wash out" over time. Currencies have no discernible correlation with equities and their values are determined by different economic factors than effect stocks or bonds.

For those whose strategy consists of buying (going "long") options (puts or calls), the maximum risk is limited to the total amount of the premiums paid for the options. However, when options are written (a "short" position taken), some income accrues to the investor but substantial market risk may also be taken. In the latter case, the writer of the option is subject to potential loss due to the fluctuation in the value of the option during the period that it may be exercised. This aspect of option trading, as well as frenetic trading, is what led to the CFM portfolio incurring significant losses.

An over-the-counter (OTC) foreign exchange option is a bilateral contract between two parties, each of whom is termed a counter party to the other. In contrast to the exchange-traded options market, no clearinghouse stands between the two parties in the OTC market and there is no regulatory body establishing trading rules. The OTC market also offers much more flexibility for institutional investors to create options to meet their specific needs than the exchange-traded market. Because of their specialized nature, bid-asked spreads in the OTC market are higher than in the exchange-traded market. OTC options are typically written for much larger amounts than exchange-traded options and a broader range of currencies are involved. The OTC market accounts for about 80% of the total foreign exchange options traded in the US.

Currency overlay strategy is seen as adding 1-2% to the value of international portfolios, with maximum losses of corresponding magnitude. Studies of currency overlay by consulting firms have generally shown that these strategies have indeed added value to portfolios. In the context of assessing the MRB/CFM matter it should be stressed that there are no known prior instances of "blow-ups" or extraordinary losses arising from currency overlay. In order for losses of the magnitude that were incurred by the MRB to take place, the trading activity pursued by CFM had to have been reflective of a strategy that was not, in fact, currency overlay.

Cambridge Financial Management's Strategy: What Was Expected

General Overview

It is obvious from a number of sources that the frantic level of trading and the indiscriminate use of written options that became the hallmark of the CFM account in the period after mid 2001 were not envisioned in the currency overlay strategy that CFM marketed to the MRB.

In materials provided to the MRB Kneafsey defined his strategy. In an article entitled "A Dual Protection Approach to Foreign Currency Overlay Management" published in the book, *Strategic Currency Investing,* edited by Andrew W. Gitlin, in 1994, Kneafsey stated:

> "The aggregate value of the currency hedging program will never exceed the value of the underlying equities." and
>
> "The program will never 'write' futures options, due to the unlimited risk of these vehicles. (Although we do sell some options as synthetics, we are never 'naked' short.)"

In his summary to that article, Kneafsey again stated that his strategy involved only the purchase of options:

> "With our combined strategy format, the risk is always limited to the transaction costs paid for the protection (in the case of a rising dollar) or to the cost of the premiums paid for the enhancement (in the event of a precipitous fall in the dollar). The total risk is limited to the combined costs of the premiums, unlike most traditional overlay programs, where the risk can be substantial."

The "Executive Summary" of "The Cambridge Financial Management Foreign Currency Overlay Program" states again that writing options is not envisioned:

> "The outstanding advantage of the Cambridge options approach is that the risk is limited to the purchase price of the options".

In a letter to Fahey dated August 19, 1998, Kneafsey states that CFM will employ "almost exclusively" OTC Options and listed options in its currency overlay program. Regarding the OTC Options, Kneafsey stated,

> "The OTC options are virtually limitless in the ways in which they can be applied. ***The chief advantage to the OTC options buyer is the limited risk (i.e., the premium or price of the option which is known in advance of purchase). In discussing listed options Kneafsey stated, "The listed option has all the advantages of the futures contract, but with limited, pre-determined risk reflected in the premiums paid…"*** (emphasis added)

In the same letter Kneafsey reviews the "worst case scenario" stating

> ***"One of the advantages of our using a generally all-options approach is that the loss can be limited to the cumulative cost of the premiums.*** The worst case would be if all option premiums vanished (or went to zero) and the dollar moved higher." (emphasis added)

He also states,

> ***"…we would expect the maximum potential loss would not exceed the 2% to 4% level per year.*** This means that the maximum potential loss on a $45 million currency overlay mandate would not be greater than $1.8 million per year." (emphasis added)

It is clear from this material that a central feature of the CFM Program was that options would not be written. This was the element of the strategy that limited potential loss.

Middlesex Retirement Board/Cambridge Financial Management Contract

The relationship between CFM and the MRB was governed by an agreement entered into in October 1998, and Investment Guidelines agreed to in August 1999. The combined documents are referred to herein as the contract. Under its provisions, the agreement could only be amended in writing. The regulatory process was completed in July 1999. The MRB entered into an agreement with CFM long before the regulatory process was completed.

Objective

CFM was provided with discretionary authority to manage a portion of MRB assets "up to $48 million notional value", which is the value of the underlying equity portfolio that CFM was assigned, in a hedge program "to protect ***Middlesex from the adverse effects of a pronounced increase in the value of the U.S. dollar against one or more designated foreign currencies (as specified below)".*** (emphasis added) Investment Guidelines reinforced this by stating that the objective was the preservation of capital. Such an objective would call for hedging the portfolio only in the expectation of a strong dollar. Contrary to the appropriate strategy, CFM had hedges in place throughout much of the account history.

> ***"The Retirement System (RS) seeks to preserve the value of its international equity investments by minimizing the impact of currency movements. That is to protect the portfolio against a rising dollar and to enhance profits from a weakening dollar."*** (emphasis added)

In response to PERAC inquiries, Mellon FX, stated that it was informed by Kneafsey,

> "that the MRB had engaged CFM to trade in foreign currency options both for the purpose of implementing a hedging program and for the purpose of pursuing revenue enhancement."

The benchmark for CFM was 50% hedged MSCI EAFE Index and the return objective was to exceed the defined benchmark on a net basis by 1.0% over a full market cycle. This establishes a comparison with a hedged index plus 1% over the 5-year period.

Risk

Risk tolerance was addressed with emphasis on limits on the hedging position. The contract stated,

> ***"The manager will not use any leverage in managing the "overlay account". "Leverage is defined as: the aggregate value of the currency hedging position will not exceed the value of the foreign security holdings within the international equity accounts assigned to CFM."*** (emphasis added).

In addition, the portfolio structure was to reflect the country weightings of the assigned managers.

Fees

Fees were set at 20 basis points of the net asset value per annum. On the basis of $48 million in assets to protect, that fee would be $96,000 per year.

Reporting

CFM was to provide the MRB with reports regarding the account on an as requested basis. Another provision stated that CFM, "should" report to the MRB at least twice a year "or whenever the Board considers appropriate." Consequently, reporting by CFM was not fully addressed in the contract but would be determined by the MRB. In addition, CFM was to provide a quarterly report to WIC that specified performance year-to-date, and since inception, in compliance with AIMR standards. According to the contract, CFM's performance numbers were to be reconciled with Mellon who would be calculating performance for the MRB.

Under the terms of the contract, CFM was to inform the MRB and WIC if losses exceeded 3% of the portfolio and to report any changes in the "process of investment" to the MRB and WIC within 15 days.

Brokerage

CFM was authorized to establish, maintain and deal through accounts with one or more brokerage firms and with one or more banking firms as it might select. CFM was to use its best efforts to obtain most favorable net price and execution available.

CFM was to arrange to have brokers who effect transactions to send to MRB confirmations of purchases and sales and, on written request of MRB, CFM would arrange that copies of any of the foregoing be sent to others.

Prohibition on Writing Options/Speculation

Consistent with the strategy that CFM had outlined to the MRB during the selection process, the contract addressed the issues of speculation and the writing of options stating that CFM

> ***"will not engage in currency speculation or currency plays in countries where the manager is without exposure." "CFM will use listed options, but will not write options.*** CFM will also use interbank and OTC forwards through the custodian bank, Mellon Trust, other parties may be introduced later on". (emphasis added)

The contract also precluded

> "any investment prohibited by PERAC that has not been granted a waiver."

Manager Monitoring

The contract provided for three levels of action regarding deficiencies in the performance of CFM. These were "Watchlist, Probation, and Dismissal."

Watchlist – denotes an increased level of concern, but does not indicate major deficiencies.

1. Condition: Underperformance – over a period of two consecutive quarters cumulative benchmark returns are 200 – 400 basis points below the passive benchmark. Comparable ratio since inception 98-96%. Watchlist may also be appropriate if the manager's performance during the first four quarters of the account is 350 – 550 basis points below the benchmark. Performance below the 400 basis points for any two consecutive quarters and below 550 basis points for the first four quarters will "imply" a manager's placement on the probation list."

2. Condition: Minor organizational change.

Probation – This is the second level of contract review and indicates a serious deficiency. WIC's staff, with the MRB's approval, would determine when CFM should be placed on probation. Probation is stipulated for one of the following deficiencies:

1. Condition: ***Significant underperformance.*** Over a period of two consecutive quarters, the manager's cumulative portfolio returns since inception are below the cumulative benchmark returns by more than 400 basis points. A comparable value relative ratio since inception is below 96%." (emphasis added)

2. Condition: Deviation from style. ***Manager's portfolio characteristics are significantly different from the assigned style.*** (emphasis added)

If CFM does not correct the deficiencies within a year, WIC would prepare a special report on progress to the MRB. After reviewing the situation, the following actions may be taken:

1. Continue probation
2. Reduce the assets under management
3. Review investment guidelines
4. Renegotiate fees
5. Dismiss the manager

Dismissal - Prior to making the final decision, the MRB may invite CFM to make a presentation at a monthly or special meeting. WIC staff may recommend dismissal when CFM has significantly underperformed both the short-term benchmark and the long-term benchmark.

Amendment
The specific terms of the contract between MRB and CFM required that changes in the contract be made in writing. The material reviewed by PERAC does not indicate that the contract relating to the MRB-CFM account was ever amended, revised, or changed in any way.

PERAC Conclusion

Based on the material reviewed, PERAC concludes:

1. The MRB entered into an agreement with CFM prior to the completion of the regulatory process. This was not in compliance with good practice.

PERAC Supplemental Regulation

The supplementary regulation approved by PERAC on July 28, 1999, stated that:

> "Currency futures, currency options (puts and calls), and forward currency contracts may be written against securities in the international equity portfolio to a benchmark level of 50% of market value with the authority to go up to 100% if deemed appropriate during temporary market conditions."

The 50% benchmark, which is also the level authorized for total hedging exposure in the CFM account guidelines, is the one typically used by institutional currency overlay accounts.

The final sentence of the supplementary regulation includes the following:

> "Speculative currency positions or trades unrelated to underlying portfolio holdings are strictly prohibited".

PERAC Conclusion

Based on the material reviewed, PERAC concludes:

1. At no time did the MRB seek an amendment to or a new regulation pertaining to this investment.

Wainwright Investment Counsel: What Was Expected

Middlesex Retirement Board/Wainwright Investment Counsel Contract

During the period that the CFM account was active, contracts between the MRB and WIC set forth the duties and responsibilities of WIC as investment consultant to the MRB. Three different agreements governed some of this period (October 1997, January 1999, and January 2002).

The MRB's understanding of WIC's responsibilities and its expectations are summarized in a response that MRB used several times in addressing PERAC questions:

> "Middlesex Retirement Board engaged WIC as an investment consultant to assist the Board in the review and restructuring of existing investment policies for the retirement system pension fund; a determination of appropriate asset allocation strategies; performing Asset Manager searches, developing Asset Manager guidelines and benchmarks; and evaluating the ongoing performance of the Asset Managers. In fulfilling those responsibilities WIC reported to the entire Board on at least a monthly basis. For each meeting WIC prepared an agenda and a written report with respect to review of portfolio manager's performance. WIC established procedures and criteria to determine if portfolio managers should be placed on a watch list, probation, or recommend termination. We are aware that in fulfilling these responsibilities WIC received and reviewed monthly account statements from our custodian, Mellon Bank, indicating market value, unrealized gains and losses and account activity. Additionally, WIC received monthly reports from Russell Mellon, which were also available on Mellon's website and would indicate the current market value of the account, cash value of account, and performance statistics on a one month, three month and year to date basis as well as one year, three year and five year performance evaluation. Based on the reports, meetings and recommendations, the Board acted to fulfill its obligations."

Services

WIC was to assist the MRB in reviewing and restructuring the existing investment policies, determining appropriate asset allocation strategies, performing asset manager searches, developing asset manager guidelines and benchmarks, and evaluating ongoing performance of asset managers. (January 2002 and January 1999)

In the period from October 1997 to January 1999, services to be provided by WIC were slightly different. These included reviewing and restructuring existing investment policies and strategies, selecting investment strategies that are appropriate in light of the investment objectives, selecting new asset managers or confirming existing asset managers whose investment style is consistent with the investment objectives, and evaluating the ongoing performance of asset managers.

In the 1997 through 1999 period, WIC was obligated to assist MRB in reviewing existing strategies and in selecting investment strategies appropriate in light of the investment objectives. Currency overlay would be such a strategy.

Under all contracts in place during this period WIC had an obligation to evaluate the "ongoing performance of asset managers." Thus, under the contract, WIC had a duty to evaluate the ongoing performance of CFM. The contract between the MRB and CFM establishes a monitoring system that sets forth standards for WIC to evaluate the CFM's performance. (see above).

Material received and reviewed by PERAC does not indicate that WIC performed analysis with respect to the general issue of currency hedging. However, some material has been received from MRB that includes currency-hedging analysis prepared by J. A. Hannah in 1997.

Its previous consultant, the Hannah Group in 1997, had recommended the currency overlay strategy adopted by the MRB. According to WIC, the MRB approached them about the implementation of such a program and the WIC assisted the MRB in the selection of currency overlay managers and "certain matters" regarding implementation of the program. WIC was unable to recount its communications with the MRB relative to this issue. The MRB asserts that WIC did in fact perform analysis as to the appropriateness of currency overlay as a strategy for the MRB. No documentation of such analysis was in the material that PERAC reviewed.

Account Information

WIC is obligated to perform an assessment of current and prospective managers upon receipt of the agreement and thereafter,

> "as required and requested by the client the consultant will provide the client with quarterly performance evaluation reports and such other information and reports as are agreed upon by the client and the consultant."

On January 2002, an obligation existed for WIC to conduct an assessment of CFM, as it was providing services to the MRB at that time. In the material received from the MRB and WIC, no such assessment or analysis is mentioned.

Transaction Confirmations

The MRB was to provide or direct CFM to provide WIC with transaction confirmations, monthly transaction, and/or asset statements provided by broker-dealers other than WIC and by custodians other than the custodian.

Valuation

During the period from January 2002 until the end of account activity the following language addressed valuation,

> "In determining the value of the account or any of its assets by the custodian as the bank of record for the client." (January 2002)

Although the contractual language is unclear, the MRB, in response to PERAC questions, stated that the MRB and WIC agreed that the valuation of the portfolio by Mellon would be used.

During the 1999 to 2002 period, this paragraph governed the valuation of the CFM account by WIC:

> "In determining the value of the account or any of its assets, any equity security listed on a national securities exchange will be valued at the last quoted sale price on the valuation date and Mutual Fund shares will be valued at the last quoted redemption price on the valuation date. ***Any other security or asset will be valued as determined in good faith by the consultant to reflect the fair value of the security or asset."*** (January 1999 and October 1997) (emphasis added)

Limitation on Liability

The MRB-WIC contract included a limitation of liability clause stating,

> "… WIC and any of its officers, directors, stockholders, employees, agents and representatives shall not be liable against any loss, claim, damage, or liability, joint or several, to which any of them may be subject in so far as such loss, claim, damage, or liability arises out of and is based upon its activities in connection with providing Asset Manager Consulting Services under this Agreement. The client agrees that WIC and its related persons shall not be liable for any loss or other claim of injury with respect to the account except for loss or injury caused by gross negligence or willful misconduct." (January 2002)

This provision does not appear in the January 1999 or the January 1997 contracts.

PERAC Conclusion

Based on the material reviewed, PERAC concludes:

1. The provision in the contract between the MRB and WIC limiting the liability of WIC is a violation of PERAC Regulation 840 CMR 26.01(4)(b) which states,

   "No contract shall contain a provision which requires the indemnification of the consultant by the retirement board".

   In addition, it is supplanted by PERAC Regulation 840 CMR 17.04(10) which states,

   Every consultant "shall be deemed to have agreed with the retirement board 1. to be liable to the board for any losses due to any violation of the provisions of M.G.L. c.32, s.23 or of 840 CMR 17.00 including without limitation any violation of the code of ethics of 840 CMR 17.02 or the standards of conduct of 840 CMR 17.03 and 17.04."

Mellon: What Was Expected

The MRB's understanding of Mellon's responsibilities as custodian and its expectations are summarized in a response that MRB used several times in addressing PERAC questions:

"Monthly Valuations of the portfolio were prepared by Mellon which were relied on by both MRB and WIC. Further a variety of services were provided by Mellon including all those services and duties set forth in the Mellon Custodian Contract with MRB as well as the representations and warranties in Mellon's RFP. More specifically, Mellon guaranteed that the monthly valuations provided to both WIC and MRB would be "100% accurate". To ensure this accuracy, Mellon would be employed to continually and automatically monitor our account.

On a monthly basis an account supervisor was supposed to conduct a "final audit" before authorizing production of the monthly reports to us. As a further "guarantee of accuracy", the month end report package with the investment managers included a reconciliation letter, which must be signed by an authorized member of the investment firm and returned to Mellon Trust. Our account supervisor was supposed to insure that these reconciliation letters were returned promptly and that any necessary adjustments were processed immediately. Mellon assured us that it received automatic pricing feeds from numerous vendors on a daily basis and that for securities not priced by vendors Mellon had a "dedicated pricing unit". We were assured that "Mellon Trust continually apprises the managers of their portfolio's trading status, daily short term investment balances and upcoming account activity. The advisor services group handles manager inquiries dealing with trades and securities in the manager's accounts following receipt of their monthly accounting reports. Alternatively, the service delivery specialist handles pricing, accounting and reporting and all client inquiries."

Specifically, Mellon services provided to both WIC and MRB with respect to currency options stated, "over-the-counter currency options are priced using a Black-Scholes pricing model that takes into consideration the option strike price, expiration date, market risk free rates and applicable volatilities." Mellon assured both WIC and MRB that its month end reconciliation process was a "rigorous" and "time consuming" task and that broker quotes would be sought if feasible.

These are the services that Mellon agreed to provide to MRB with copies of the monthly valuations of the portfolio sent to WIC. Based on the failure of Mello (sic) to provide these services, neither MRB nor WIC was made aware of the true value of the CFM account until after Kneafsey's death. (See Mellon Trust Representations and Warranties attached as Exhibit A.)

Also, Mellon was the counterparty on approximately half the transactions with CFM."

A more detailed examination of the relationship between the MRB and Mellon is contained below in the discussion of account valuation and Mellon FX.

PERAC Conclusion

Based on the material reviewed, PERAC concludes:

1. The MRB retained professional expert entities to assist in managing the assets of the retirement system. WIC and Mellon were responsible for aspects of the investment process that concerned all managers. CFM was retained to invest in a currency overlay strategy. The agreements between the MRB and these entities, with the possible exception of valuation issues presently being litigated, in general, established sufficient safeguards to protect the system from significant losses due to CFM's activity.

What Happened?

From the moment that it was revealed that serious and unexpected losses in the CFM account existed, the question has been asked, how did this happen?

To answer this question, two aspects of the account history must be explored. One is the trading activity that actually resulted in the losses and the other is the circumstance that caused those losses to go undetected.

Cambridge Financial Management Account Management – Speculation

The account began in September 1999 as a conventional currency overlay account, consistent with Kneafsey's stated strategy and MRB's mandate and guidelines. As the currency markets failed to provide a profitable environment for his strategies, modest losses on the purchased options began to ensue. By the spring of 2000, he began to write options. Although it appears that the MRB and WIC became aware of that practice, writing options was prohibited in the contract between the MRB and CFM.

The amount of realized gains and losses was typically large relative to the month-end portfolio holdings since the month-end holdings usually represented only a fraction of the trading activity in the account during that month. Trading volume and turnover were huge relative to the size of the account. Positions were typically taken and liquidated within a few days (sometimes even on the same day), more often than not at a loss.

CFM's reports to Mellon indicate that the account was indeed losing money, as losses were consistent and typically large relative to positions taken. For example, looking at open positions, $41,000 was lost in November 1999 on premiums paid of $46,000, and $28,000 was lost in January 2000 on premiums paid of $32,000. Among closed positions, it was also common to see calamitous losses, such as in January 2002, when all purchased call options, for which $257,000 in premiums was paid, expired worthless.

In violation of the contract, CFM began to write options in the spring of 2000. By the end of 2000, the premiums received from written options approximated the cumulative losses taken up until then on options trading. As losses, both explicitly reported and disguised by inflated pricing, rose considerably in 2001, so did the level of options written.

While there may be a number of different ways to calculate "exposure", it was clear by any measure that, by mid to late 2001, the total exposure represented by the option positions was already huge relative to the actual international equity assets. On December 31, 2001, the portfolio was long $125 million in calls and $684 million in puts, purchased with premiums of over $5 million. Applying what is known as the "delta" factor to these options, approximate effective exposure from the long options alone was as high as $200 million, about five times the actual value of the equity assets that were being "overlayed". In a conventional currency overlay program, the exposure would be less than the underlying assets. Not only was the magnitude of the options positions in the portfolio grossly disproportionate to the underlying assets, but also the positions almost certainly had no relation to the currency exposures in those equity assets.

The level of currency exposures throughout the history of the account is estimated as follows:

CFM/MIDDLESEX PORTFOLIO
ESTIMATED EFFECTIVE CURRENCY EXPOSURES *($ Millions)*

Date	JPY	CHF	GBP	EURO	Total Gross Exposure
09 30 1999	- 1.0	0.0	- 0.1	0.1	1.3
12 31 1999	- 1.1	0.0	- 0.2	0.1	1.4
03 31 2000	+ 4.6	0.0	0.0	- 0.4	5.0
06 30 2000	- 4.0	0.0	8.0	8.0	20.0
09 30 2000	25.3	0.0	4.0	12.5	41.8
12 31 2000	28.7	0.0	4.0	- 20.1	52.8
03 31 2001	132.8	0.0	19.2	69.9	221.9
06 30 2001	153.0	27.0	- 7.4	204.7	392.1
09 30 2001	222.7	10.6	0.0	254.5	487.8
12 31 2001	82.8	0.0	- 1.5	71.7	156.0
03 30 2002	15.3	- 11.5	4.0	11.3	42.1
06 30 2002	28.9	7.4	10.6	22.4	69.3
09 30 2002	- 11.9	- 9.6	30.9	55.0	107.4
12 31 2002	12.7	7.4	11.4	- 0.1	31.6
03 31 2003	- 19.7	24.2	- 5.6	20.9	70.4

Using conservative assumptions and quantitative methodology recommended by Robert Murdock of Analytic Investors, PERAC calculates that CFM began to violate the 50% standard for total hedging during the third quarter of 2000, within a year of the account's inception. Total effective currency exposure as of September 30, 2000 was calculated to be $41.8 million (consisting of long positions versus the US dollar equivalent to $25.3 million in yen, $4.0 million in British pounds, and $12.5 million in Euros), which, during an unremarkable period in the currency markets, was about 90% of the value of underlying equity assets at the time ($46.7 million).

By the first quarter of 2001, there was no question that the account was violating both the PERAC supplementary regulation and the account mandate by enormous margins. The ravages of the bear market had reduced the value of the underlying equity holdings to $38.8 million, but total exposures in the MRB account surged to $221.9 million ($132.8 million in yen versus the dollar, $19.2 million in the British pound, and $69.9 million in Euro).

From this level, total estimated currency exposure rose to an astounding $487.8 million by September 30, 2001, and remained well above 100% of the equity asset values at every quarter-end—except one—throughout the history of the account.

Our calculations are based on conventional analytic techniques using reasonable estimates of appropriate "delta" factors for the long and short options. Actual par, or notional, values for the combined option positions in the portfolio were typically well in excess of $1 billion beginning in 2001.

Since "in the money" options have much higher delta values than "out of the money" options and since CFM's purchased options were typically well "out of the money" (requiring minimal outlay), while its written options were usually well "in the money" (bringing maximum proceeds), most of the exposures in CFM's positions were represented by the written options. Indeed, the composition of the portfolio was typically such that total exposures, considering the written options alone, were actually higher than when the purchased options were included. Indeed, while the total exposures for combined holdings as of September 30, 2000 was noted above to be $41.8 million, the exposures represented by the written options alone were actually $45.0 million, an even more egregious violation of the supplementary regulation.

The currency markets were generally efficient over the life of the CFM account. There were no particular events or market conditions that would have justified the account significantly exceeding the 50% benchmark on anything other than a very temporary basis. The fact that the account showed total effective exposures consistently well above 100% of the underlying assets—indeed, sometimes exceeding 10 times those assets—was a clear indication that the account was violating the PERAC regulation, as well as the contract provisions that barred currency speculation.

A number of other aspects of the CFM account activity deviated from normal currency overlay practices. These include, perhaps most tellingly, the return of substantial sums to the MRB. CFM made payments back to the MRB beginning with the $1 million payment authorized in July 2001. For a strategy that is supposed to deliver enhanced returns of a very modest nature, returning an amount equal to 25% of the initial trading account less than two years since inception should have raised questions about what was really going on with this account. There appear to have been no questions on the part of the MRB and/or WIC regarding the implications of these disbursements as they related to management of the account. In an interview with PERAC, Otis, in reference to several transfers from the CFM account to the MRB, said that the money was returned at the request of O'Neil of the MRB who indicated that the MRB was sweeping accounts to raise cash. According to Otis, Kneafsey believed that these transfers would not hinder his ability to manage the program.

Beginning in 2001, for the yen and euro and in 2002 for the Swiss frank and British pound, CFM expressed its currency bets not in simple, traditional ways such as establishing a position in either puts or calls for a particular currency, but in the unconventional and basically speculative way of having four separate holdings (long puts, long calls, short puts, short calls) for the currency. The typical way for a manager to execute currency overlay would be to express his bets on various currencies through the purchase of either puts or calls on certain currencies in relation to others at a particular price relationship. Writing options, involving far greater potential risk than purchasing options, is done much less frequently by conservative managers. It's possible that currency specialists might have proprietary range-related strategies that involve purchasing puts and calls simultaneously on the same currencies, or purchasing and writing similar options simultaneously. Nevertheless, since purchasing puts represents the same directional bet as writing calls, and purchasing calls represents the same directional bet as writing puts, and that calls and puts generally represent opposite directional bets, a trading practice that involves having a number of different positions (long, short; puts, calls) on the same currency relationship, particularly when the total effective exposures are disproportionate to the underlying assets, is likely to be symptomatic of a strategy that goes far beyond traditional currency overlay and is likely to represent strategies of a largely speculative nature.

All of these factors support the conclusion that CFM, through most of the period of the account history was not involved in currency overlay, but, in fact, was engaged in risky and to some extent what appears to be pure speculation.

Other factors confirming the existence of currency speculation were:

1. Over its final two years, trading activity in the account was typically at frenzied levels totally inconsistent with a normal currency overlay program. While a conventional currency overlay program might have very small (if any) positions in place and might have very little (if any) trading activity during times of trendless activity in the currency markets, not only were CFM's positions well out of proportion to the underlying assets but the account was being managed in a high-turnover, day-trading manner totally at odds with expectations. Otis, commenting on the increase in trading volume that took place after 2001, said that this occurred when CFM began to invest in bank options rather than futures options. Bank options entail a number of small positions around a narrow band in the market. According to her, the balance sheet at the end of the month looked all right.

2. After July 2000, CFM ceased to report to MRB how its portfolio tied in to the underlying equity holdings and its positions had already begun to have no relation at all to those holdings.

3. Analysis of the effective exposures on each major currency from quarter to quarter showed no consistent pattern. The erratic trend of the positions not only confirms the portfolio's total detachment from the underlying equity holdings, but also indicates the absence of a consistent, rational strategic basis for CFM's trading.

4. The fact that CFM's strategy involved substantial writing of options, a practice specifically forbidden in its account guidelines with MRB and entailing significantly more risk than the purchase of options, was itself indicative of

speculative activity. Beginning in 2001, the premiums received from written options exceeded $4 million, the amount originally provided for the purchase of options. By the end of 2001, written option premiums, as clearly reported on the front page of the monthly portfolio reports from Mellon, exceeded $10 million and reached an astonishing $29.4 million by March 2003. The spiraling use of written options to levels many multiples the size of the underlying equity portfolios, was a clear and unambiguous signal that the CFM account was not involved in conventional currency overlay but in a dangerous cycle of intense, virtually "out of control", currency speculation.

PERAC Conclusions

Based on the material reviewed PERAC concludes:

1. CFM, throughout much of the history of the account, was engaged in speculation rather than currency overlay. The trading activity in the CFM account was not consistent with currency overlay, which is typically a low turnover strategy. Heavy, aggressive trading as conducted by CFM is highly unusual. In general, there are often periods when no trades are made in currency overlay accounts. The frenetic trading activity in the CFM account contravened the basic principles of currency overlay management.

2. It is unheard of for a currency overlay manager to return a sizeable amount of purported profits to the plan sponsor, as CFM did to the MRB. The MRB and WIC raised no questions about these transfers and apparently were either unaware of the unusual nature of such transfers or chose to ignore the implications of such transfers.

3. The CFM account had exposures far in excess of the value of the underlying equity securities for most of the account history.

4. After July 2000, CFM's positions had already begun to have no relation at all to the underlying equity holdings. At that time, CFM ceased to report how its portfolio tied in to those holdings. CFM violated the PERAC Supplementary Regulation as the currency hedging positions consistently failed to reflect the country weightings of the underlying accounts throughout much of the account history.

5. The CFM account was in violation of the PERAC Supplementary Regulation in that the CFM was engaged in speculation and in violation of the limits set forth in that Supplementary Regulation.

The losses incurred in the CFM account took place primarily because CFM engaged in speculation and to facilitate that speculation, wrote options in the unusual way described previously. This resulted in a vicious circle with CFM writing options to obtain cash to cover actual losses and then incurring more losses on those written options. The extent to which the MRB was aware that CFM was writing options is unclear.

The MRB, in response to PERAC inquires, denied any communication with the WIC relative to the issue of violations of the prohibition on CFM writing options. Aristizabal of WIC, according to WIC responses, recalls informing the MRB and Gibson that the writing of options in the CFM account was taking place and that the leverage associated with the currency overlay program created a potential for greater losses in that account than would otherwise be the case. Specifically the WIC response states,

> "Mr. Aristizabal recalls at least one occasion on which he noted to the MRB board and to Thomas Gibson that the writing of options in the CFM account and the use of currency forwards in the A.G. Bissett account and the leverage associated with the currency overlay program created a potential for greater losses in that account than would otherwise be the case."

Mellon FX in responding to PERAC inquiries stated that,

> "After Mr. Kneafsey's death, Mr. Fahey informed Mr. Christianson of Mellon FX that CFM was not authorized to write foreign currency options on behalf of the MRB."

Mellon FX in its response to PERAC said that this directly contradicted the "written authority provided by the MRB to Mellon FX as contained in the FEOMA." Mellon FX indicated that the telephone conversation in which Fahey made the statement was the only time that the MRB informed Mellon FX that it intended that CFM have less authority than that provided in the FEOMA executed by Fahey.

On the other hand, in response to PERAC inquiries, the MRB stated that it did authorize CFM to write options, citing the supplemental regulations and the FEOMA Agreements. However, the contractual agreement between the MRB and CFM prohibited CFM from writing options. The PERAC Supplementary Regulation sets the regulatory limits of the MRB's flexibility. The MRB/CFM contract delineates the managers' authority within that regulatory flexibility. In addition, in response to an inquiry about whether or not CFM had raised the issue of changing this provision of the contract, the MRB answered in the affirmative; however, it did not provide any details of that communication as requested.

In addition, WIC addressed options writing and said such activity was consistent with the supplemental regulation and the FEOMA contracts. WIC states,

> "This was not a 'violation' of the guidelines, it was a change in the guidelines of which MRB and WIC were both aware."

The MRB did not respond to questions regarding CFM's violations of the contract as they pertain to the prohibition on writing options. The MRB ignored the question and focused on the supplemental regulation and the FEOMA contracts into which it entered. WIC stated that at the direction of counsel, both WIC and MRB are evaluating the CFM account activity in light of the discovery in April 2003 that Mellon's reports were inaccurate.

PERAC Conclusions

Based on the material reviewed PERAC concludes:

1. Although it is not uncommon for currency overlay investors to write options, writing options is usually done under strict controls that include a stop loss mechanism to prevent losses. The CFM contract prohibited the writing of options; however, the MRB acquiesced in CFM writing options without amending the contract or enforcing any controls.

2. In spite of the Fahey statement regarding CFM's authority that Mellon FX cites, the preponderance of the evidence leads to the conclusion that, at a minimum, the MRB was aware of the fact that CFM was writing options.

3. The MRB/CFM contract includes a provision that it can only be amended in writing, consequently, the acquiescence of the MRB and WIC to option writing by CFM is not a proper amendment to the contract.

4. The awareness on the part of the MRB and WIC that Kneafsey was writing options obligated the MRB and WIC to increase monitoring of the account in light of the assertion by Kneafsey, at the time of his selection and retention, that the limited potential for loss due to CFM's strategy not encompassing the writing of options was no longer relevant.

5. MRB's responses to PERAC evidence a lack of understanding of its role, the nature of a contract, and the regulatory environment in which it operates. Again, the terms of the FEOMA Agreements that were agreements between the MRB and Mellon and the MRB and Goldman Sachs as well as the PERAC Supplementary Regulation are irrelevant to the issue of whether CFM complied with the contractual guidelines agreed to between the MRB and CFM. The precise mandate of CFM was set forth in the contract between the MRB and CFM, within the context of the regulatory environment. That mandate is not set forth in a contract between the MRB and a third party, in this case Mellon or Goldman Sachs, the parties to the FEOMA agreements.

Middlesex Retirement Board Acknowledgement

On January 14, 2004, PERAC staff met with MRB Chairman Fahey, MRB Counsel Gibson, and MRB Member Curtin. At that meeting, Fahey acknowledged that CFM did not engage in currency overlay throughout the account history. He agreed that the magnitude of the options written, the trading activity, and the fact that positions were out of proportion to the underlying equity holdings all indicated that the account was engaging in strategies that were not consistent with the product that CFM marketed to the MRB, or that was set forth in the MRB/CFM agreement, or that was consistent with the PERAC supplementary regulation.

Notes made by Fahey that reflect the content of a conference call on May 5, 2003 also support this conclusion. A number of parties including representatives of WIC, Analytic, and the MRB were discussing issues and assessing options relative to the CFM portfolio following the discovery of the losses.

These notes, taken by Fahey, make several references to the CFM "portfolio guidelines". Included are the statements, "need portfolio guidelines + judge quality/quantity (?) of actions" and " see last report (1) trade to bring within guidelines IMMEDIATELY"

The notes reflect confusion about the status of the account and an awareness that CFM was, in all probability, not investing according to its mandate. In that sense, although the notes support the conclusion that Fahey was not aware of the amount and nature of the trades in the account, it is evident that a breakdown had taken place in monitoring the activities of CFM.

Valuation Issues

Overview

According to the widely-used Black-Scholes model, the pricing of currency options combines six factors: the current (spot) exchange rate, the strike price at which the option can be exercised, the time to expiration, the volatility of the exchange rate, and interest rates in the home and foreign markets. The total value of an option prior to maturity is based not only on its intrinsic value (reflecting the difference between the strike price and the current exchange rate) but also its time value, which is the additional value the market places on the options, reflecting the time remaining to maturity, the forecast volatility of the exchange rate, and other factors. Time value is not linear, however, as, for instance, one year options are not valued at twice the value of six month options. Valuations are largely dependent on whether options are "at-the-money", "in-the-money", or "out-of-the-money".

The higher the volatility, the greater the value of the option, since the likelihood that an option will move "in-the-money" is increased. Options dealers express quotes and execute trades in terms of implied volatility, which is the market's current estimate of future movement potential, as determined by supply and demand in the market. When asked to give a quote on an OTC option, a dealer will typically give both a bid—the volatility at which he is prepared to buy an option of the specified features—and an offer—the volatility at which he is prepared to sell such an option. The mid-point of the spread would represent the approximate fair value of the contract premium. The spread between the bid and asked prices is usually referred to as a measure of the transaction costs of a trade. With the buyer and seller of the options dealing directly with each other, there are no commissions per se.

Cambridge Financial Management Account Valuation History

In discussing the CFM valuation history, it must be kept in mind that pricing is referring to CFM's valuation of the options. In effect, those valuations were the only assessments ever made of the account.

From the inception of the CFM account up until January 31, 2001, pricing of options appeared to be generally accurate as both realized and unrealized losses were reported at the end of each month. On January 31, 2001, the unrealized loss was shown as $385,945. From February 2001 through the end of the account, however, the account showed nothing but unrealized gains; beginning with $600,205 on February 28, 2001; expanding to $8,479,250 as of December 31, 2001; to $15,998,500 as of December 31, 2002; and to $21,485,950 on March 31, 2003. An analysis of the portfolio's option pricing by Analytic Investors indicated that pricing was frequently "sloppy" (some overvalued, some undervalued), but generally fair through the first quarter of 2001. But parts of the portfolio increasingly began to show suspiciously inflated prices through the remainder of the year. CFM appeared to be "systematically inflating the value of his open positions" as many large positions were priced with assumed volatilities of 20-30% and higher, when actual volatility should have been no higher than 10-15%. Thus, the $12.5 million in premiums received for options written as of December 31, 2001, most likely covered about $7 million in cumulative reported realized losses and several additional million in additional losses disguised by inflated pricing, while also enabling CFM to continue an aggressive program of option purchases.

Probably the most egregious markup in the portfolio as of March 31, 2003 was on 30,000 puts on the Swiss franc with a $1.42 strike price that was purchased on March 25 and would expire on April 3. During the course of only four trading days, during which the currency apparently strengthened slightly (which would, other things being equal, cause the value of the put to decline), the value of the contracts (as reported by CFM) rose from $33,000 to $1,245,000.

Similarly, 45,000 put options on the Euro purchased on March 25-27, expiring on April 16, were marked up from $118,500 to $1,584,000 even though the currency was strengthening during the last few days of the month and, since the Euro was at $1.09 and the put was at $1.04, the contracts were well out of the money and would have been worth very little.

As a further example, a Euro call with strike price $1.25, purchased on March 7 that was due to expire on April 2, was inexplicably marked up from $84,000 to $396,000 even though with the currency at $1.09, the contracts were about to expire worthless.

On the basis of materials reviewed by PERAC and responses to inquiries, this practice remained apparently undetected by the MRB and its consultant for nearly two years until Kneafsey's death, at which time it became clear that the $21.5 million in "unrealized gains" on the purchased options as of March 31, 2003, was in reality a $2.7 million loss. Thus, the value of the purchased options was overstated by $24.2 million.

As noted, the trend of inflated pricing began on a somewhat limited but expanding scope in 2001. By the final months of the portfolio, it was apparent that every held option was inflated in value, often by totally unrealistic and impossible magnitudes.

CFM's submissions to PERAC do not include reports for the months of April-July 2000, but it is known that written options began appearing in the portfolio in the spring of 2000. From that time through February 2002 these written options were priced at cost rather than at market value. (The purchased options had always been priced at market value, or more specifically, at Kneafsey's estimate at market value.). For the next thirteen months, options were supposedly priced to market, but the accuracy of this pricing is highly suspect since every monthly pricing showed composite profits on these holdings. The $3.8 million unrealized appreciation reported for the $29.4 million in written options on March 31, 2003, was in actuality a $9.0 million loss. Written options were thus overstated in value by $12.8 million by that date. (This $12.8 million combined with the $24.2 million in inflated value of the purchased options noted above accounts for the $37.0 million in overstated value for the portfolio as of March 31, 2003.) The fact that CFM doubled the amount of options written during 2002 from a large $12.5 million to a staggering $23.6 million in premiums received appears consistent with the assumption that it was doing so to cover losses from both purchased and written options that were increasing at an alarming rate through the course of the year. Also, the beginning of market pricing of the written options is coincident with the cessation of disclosure of realized profits and losses in the monthly portfolio summaries sent to Mellon.

Beginning during 2001, the monthly portfolios gave an increasingly overvalued picture of the overall account. At the same time, however, the portfolio summaries and transaction journals gave an accurate reading of the actual trading losses the account was incurring. By the second half of 2001, Kneafsey began to grossly inflate the value of purchased options in a further effort to hide the alarming accumulation of actual losses. In response to PERAC inquiry, Otis said that she did not check the prices of the options with recent trades in the market. She further stated that written options were carried at cost on instructions from Mellon. In response to PERAC inquiry, Mellon stated that it provided the MRB and WIC with the valuations provided by CFM. According to Mellon, those reports were carried at cost from 2000 to 2002 because CFM provided a value equal to cost for written options during that period. Mellon stated that it did not request that valuations be based on market value in early 2002.

Mellon/Cambridge Financial Management

Otis explained the Mellon-CFM pricing process. She said that each month she would check to insure that the information Mellon had was accurate by using Mellon's "workbench" match. Kneafsey would give her the prices and she would input them into an Excel spreadsheet and send them to Mellon. Otis believed that the process was a cross checking mechanism and that Mellon counter-checked or cross-checked what was sent by running the reports through their system. Otis said that she and Kneafsey met with the MRB and WIC to review the process when the account was initiated. Otis stated that at no time did Mellon ask what CFM was doing in providing the pricing information.

Mellon, in response to inquiries from PERAC, set forth a description of the monthly process, "Each month Boston Safe would reconcile the monthly reports of all positions provided to it by CFM against Boston Safe's records regarding the transactions in the CFM account to assure that the monthly reports of account activity to be submitted to the MRB accurately captured all information concerning transactions and outstanding positions. When conducting this reconciliation, Boston Safe had no valuations for the OTC foreign currency options other than those provided to Boston Safe by CFM, upon which Boston Safe was entitled to rely pursuant to (Section) 7(f) of the Custody Agreement."

Mellon, in response to PERAC inquires, informed PERAC of its belief that WIC and/or the MRB were aware that Boston Safe was reporting CFM's valuations of account holdings to the MRB. In discussing an email from Timothy Sayer of Boston Safe to Jon Fabrizio of WIC, dated July 2, 2001, Mellon states that Sayer "plainly informed WIC that Boston Safe took values for the options in the CFM account from CFM." The email was an update on the reconciliation process for one month. It reads as follows:

```
Jon,

The line item accounts, venture capital, real estate, Cambridge
financial, are not anywhere near being completed. (we get pricing
on currency options from Cambridge on the 6th BD.) I imagine the
active accounts are pretty close. Let me know if you need anything
else.

TS
```

In its interpretation of the email Mellon states that in referencing "line item accounts, venture capital, real estate, Cambridge financial" it is distinguishing between accounts for which Boston Safe received values from firms retained by the client and "active accounts" for which Boston Safe received values from its own vendors."

Impact of False Valuations

From the table below, it appears that CFM created fictitious "unrealized gains" in a magnitude sufficient to cover the cumulative actual realized losses incurred to date:

	Cumulative Realized Losses	"Unrealized Gains"
12-31-01	$7,768,000	$8,479,000
12-31-02	$18,764,000	$19,567,000
3-31-03	$24,349,000	$25,312,000

While the fictitious "unrealized gains" hid the actual losses from an accounting perspective, the increasing use of written options appeared to cover these losses from a cash flow point of view while also leaving CFM a cash reserve with which to cover pending losses and to finance further trading.

	Realized Losses	Written Options
12-31-01	$7,768,000	$12,542,000
12-31-02	$18,764,000	$23,645,000
3-31-03	$24,349,000	$29,431,000

Not only were the reported "unrealized gains" in the account largely fictitious (and totally so through the last several months of the account), but also they masked the fact that the account was in an actual position of unrealized losses. Specifically, fair market pricing of the March 31, 2003 portfolio showed that not only were there not $25,312,000 in unrealized gains ($21,486,000 on the purchased options and $3,826,000 on the written options), but the account was actually facing further unrealized losses of $11,694,000 ($2,680,000 on purchased options and $9,014,000 on written options). The purchased options were overvalued by $24,166,000 and the written options were overvalued by $12,840,000 as of March 31, 2003. The total account was overvalued by $37.0 million.

The accompanying table shows an option-by-option analysis of the March 31, 2003, CFM/MRB portfolio. It gives the holding size and description of each instrument, the actual cost—or option premium—paid (for purchased options) or received (for written options) by CFM/MRB, the valuation as of that date as transmitted by CFM to Mellon and reported by Mellon to MRB, and the actual fair market value as calculated by Analytic Investors in April 2003 using generally accepted pricing formulas involving the characteristics of the options and the market conditions on that day. A similar price analysis on May 2, 2003, by John Ricci of Mellon's foreign exchange desk confirmed the accuracy of Analytic's pricing.

A summary table that follows encapsulates what occurred. It shows on pro forma balance sheets how a reported positive account balance of $1,675,000 was in fact a $35,374,000 liability.

CFM/MRB Portfolio Valuation: Fact vs. Fiction ***(Portfolio of March 31, 2003)***
I. Purchased Options

Units	Description				Cost	CFM/Mellon Market Value	Analytic Investors' Actual Market Value
20,000	**JPY/USD**	**CALL**	April 2003	116.00	$18,000	$410,000	$117,070
30,000	**JPY/USD**	**CALL**	April 2003	115.00	$22,500	$411,000	$110,402
25,000	**JPY/USD**	**CALL**	April 2003	116.00	$27,500	$512,500	$146,338
60,000	**JPY/USD**	**CALL**	April 2003	115.00	$68,400	$1,146,000	$220,804
20,000	**JPY/USD**	**PUT**	April 2003	122.00	$40,400	$578,000	$47,113
20,000	**JPY/USD**	**PUT**	April 2003	122.00	$146,000	$616,000	$47,113
15,000	**JPY/USD**	**PUT**	April 2003	123.00	$39,000	$429,000	$20,886
20,000	**JPY/USD**	**PUT**	April 2003	123.00	$48,000	$618,000	$27,848
5,000	**JPY/USD**	**PUT**	June 2003	119.00	$70,500	$223,000	$75,074
20,000	**CHF/USD**	**CALL**	June 2003	1.35	$570,000	$1,190,000	$423,856
20,000	**CHF/USD**	**CALL**	June 2003	1.33	$340,000	$904,000	$286,735
20,000	**CHF/USD**	**CALL**	June 2003	1.27	$52,000	$450,000	$51,522
30,000	**CHF/USD**	**PUT**	April 2003	1.42	$33,000	$1,245,000	$22,279
50,000	**CHF/USD**	**PUT**	April 2003	1.44	$80,000	$955,000	$12,127
10,000	**CHF/USD**	**PUT**	June 2003	1.45	$406,000	$392,000	$18,917
10,000	**CHF/USD**	**PUT**	June 2003	1.43	$89,000	$482,000	$37,754
10,000	**CHF/USD**	**PUT**	June 2003	1.43	$90,000	$472,000	$33,197
25,000	**CHF/USD**	**PUT**	Sept 2003	1.42	$465,000	$987,500	$275,500
25,000	**CHF/USD**	**PUT**	Sept 2003	1.44	$362,500	$1,237,500	$201,253
15,000	**GBP/USD**	**CALL**	April 2003	1.60	$37,500	$273,000	$42,759
15,000	**GBP/USD**	**PUT**	April 2003	1.55	$69,000	$342,000	$80,454
20,000	**GBP/USD**	**PUT**	April 2003	1.545	$53,000	$370,000	$90,636
50,000	**EUR/USD**	**CALL**	April 2003	1.125	$111,000	$1,029,000	$110,320
70,000	**EUR/USD**	**CALL**	April 2003	1.20	$79,000	$1,705,000	$200,941
10,000	**EUR/USD**	**CALL**	June 2003	1.14	$28,000	$402,000	$37,943
20,000	**EUR/USD**	**CALL**	June 2003	1.14	$50,000	$792,000	$66,574
15,000	**EUR/USD**	**PUT**	April 2003	1.055	$112,500	$693,000	$36,625
30,000	**EUR/USD**	**PUT**	April 2003	1.05	$153,000	$1,275,000	$54,382
65,000	**EUR/USD**	**PUT**	April 2003	1.045	$371,500	$2,797,000	$85,877
45,000	**EUR/USD**	**PUT**	April 2003	1.04	$118,500	$1,584,000	$42,513
20,000	**EUR/USD**	**PUT**	April 2003	1.03	$42,000	$470,000	$9,100
15,000	**EUR/USD**	**PUT**	April 2003	1.02	$78,000	$415,000	$32,691
20,000	**EUR/USD**	**PUT**	April 2003	1.02	$23,000	$374,000	$4,031
Total						**$27,236,899**	**$3,070,644**
Total Price Overstatement							**$24,166,255**

CFM/MRB Portfolio Valuation: Fact vs. Fiction *(Portfolio of March 31, 2003)*

II. Written Options

Units	Description				Cost	CFM/Mellon Market Value	Analytic Investors' Actual Market Value
14,000	JPY/USD	CALL	Aug 2003	128.0	($771,605)	($725,200)	($1,300,553)
14,000	JPY/USD	CALL	Aug 2003	129.0	($809,200)	($870,800)	($1,300,553)
14,000	JPY/USD	CALL	Dec 2003	128.0	($1,099,000)	($813,400)	($1,422,369)
14,000	JPY/USD	CALL	Dec 2003	129.0	($1,197,000)	($943,600)	($1,523,227)
28,000	JPY/USD	PUT	Nov 2003	105.0	($2,820,952)	($1,738,800)	($3,002,920)
15,000	CHF/USD	CALL	Aug 2003	1.57	($967,500)	($1,236,000)	($2,489,986)
9,000	CHF/USD	CALL	Aug 2003	1.56	($543,228)	($710,100)	($1,428,326)
6,000	CHF/USD	CALL	Oct 2003	1.49	($536,040)	($421,200)	($676,383)
18,000	CHF/USD	PUT	Nov 2003	1.24	($1,414,134)	($1,306,800)	($1,515,445)
4,000	CHF/USD	PUT	Nov 2003	1.23	($385,200)	($290,400)	($360,931)
30,000	CHF/USD	PUT	Nov 2003	1.22	($2,634,000)	($2,334,000)	($2,893,415)
16,000	CHF/USD	PUT	Nov 2003	1.21	($1,508,800)	($1,289,600)	($1,646,367)
15,000	GBP/USD	CALL	June 2003	1.45	($688,500)	($901,500)	($1,437,002)
10,000	GBP/USD	CALL	June 2003	1.45	($745,000)	($646,000)	($972,062)
26,000	GBP/USD	CALL	Sept 2003	1.485	($1,053,000)	($967,200)	($2,173,946)
27,000	GBP/USD	PUT	Nov 2003	1.72	($1,867,506)	($1,304,100)	($2,016,092)
20,000	GBP/USD	PUT	Nov 2003	1.73	($1,474,000)	($1,028,000)	($1,575,404)
16,000	EUR/USD	CALL	Sept 2003	0.92	($1,224,000)	($1,398,400)	($3,061,149)
11,000	EUR/USD	CALL	Nov 2003	0.98	($984,400)	($767,800)	($1,376,285)
37,000	EUR/USD	PUT	Nov 2003	1.24	($4,470,600)	($3,951,600)	($4,223,813)
19,000	EUR/USD	PUT	Nov 2003	1.23	($2,237,700)	($1,960,800)	($2,048,783)
Total						**($25,605,300)**	**($38,445,013)**
Total Price Overstatement							**$12,839,713**

III. Combined Valuation Overstatement

Purchased Options	**$24,166,255**
Written Options	**$12,839,713**
Grand Total	**$37,005,968**

Summary: Comparative Analysis of Net Assets (March 31, 2003)

Per Mellon (CFM)		Actual	
Assets		**Assets**	
Purchased Options		Purchased Options	
Cost	$5,751,000	Cost	$5,751,000
"Unrealized Gains"	$21,486,000	Unrealized Loss	- $2,680,000
Receivables	$43,000		
Total	$27,281,000	Total	$3,071,000
Liabilities		**Liabilities**	
Written Options		Written Options	
Premiums Received	$29,431,000	Premiums Received	$29,431,000
"Unrealized Gains"	- $3,826,000	Unrealized Loss	$9,014,000
Total	$25,605,000	Total	$38,445,000
Net Assets	**$1,675,000**	**Net Assets**	**- $35,374,000**

The MRB originally entered into an agreement for custodian services on June 28, 1995 with the Boston Safe Deposit & Trust Company (BSDT). (Mellon acquired BSDT in 1993.) In responses to PERAC inquiries, the following statement is made relative to the Mellon/BSDT relationship. "Mellon Trust of New England; f/k/a Boston Safe Deposit and Trust Company …." For purposes of this report we have referred to the entity as "Mellon."

The issue that forms the basis of the present litigation between the MRB and Mellon is Mellon's responsibility under the contract to independently price the CFM holdings. The MRB contends that Mellon was obligated to independently establish the value of the CFM portfolio holdings. Mellon asserts that it was authorized to rely on CFM values for the holdings pursuant to the terms of the contract.

Elsewhere we have discussed the impact of the use of the false values that were generated by CFM in obscuring the trading activity that resulted in severe losses to the MRB. This aspect of the report will discuss the MRB/Mellon custodian relationship. PERAC does not wish to make a judgment on the issue that is the subject of the litigation, however, a review of the CFM matter that did not assess the facts and circumstances that resulted in the use of CFM's false values and the dissemination of those false values to the MRB by Mellon would be incomplete.

The contract between the MRB and Mellon provides that the MRB will furnish to BSDT, a list of persons authorized to direct BSDT on behalf of MRB ("Authorized Parties (AP)"). In addition, MRB may appoint one or more investment managers (Investment Manager) for a portion of the account. The Investment Manager will then forward to BSDT a list of persons authorized to deal with BSDT. BSDT "shall be entitled to deal with any person or entity so identified by MRB or Investment Manager (Authorized Party or Authorized Parties)."

MRB authorized CFM to interact with the custodian. This provision and the related provision regarding valuation addressed below form the basis of Mellon's defense to the MRB suit. That provision states that the custodian will:

> "(f) determine the fair market value of the account as of such dates as MRB and BSDT may agree upon, in accordance with methods consistently followed and uniformly applied. In determining fair market value of the account BSDT shall be protected in relying on values recommended by an AP"

Documents executed in September, 1999 by James T. Kneafsey entitled "Authorized Signature List" list James T. Kneafsey and Patricia A. Otis as individuals from whom "Boston Safe Deposit and Trust Co. is directed to accept trade, currency and corporate action instructions." The document is silent as to valuation reporting and appears to be the routine authorization to enable the smooth operation of the account.

Material received and reviewed includes substantial communication between CFM and Mellon relating to trading activity, money transfers, and account reconciliation. No document received and reviewed indicates that MRB or CFM ever provided a general instruction to BSDT/Mellon to rely on CFM values. In addition, the communication between CFM and Mellon that we have reviewed fails to indicate that Mellon was directed to employ the CFM values or that Mellon would be using those values. Otis stated to PERAC that it was her belief that the purpose of CFM forwarding its values to Mellon was that Mellon would cross check those values against its own.

Mellon Pricing Standards

A letter dated April 4, 1996 from Thomas A. Heiner, Officer, BSDT, on Mellon Trust stationery to John Walsh of MRB, discussed Mellon pricing standards. It asserts that,

> "Mellon Trust works interactively with pricing vendors, industry groups, brokers, investment managers, and clients to keep pace with changing securities markets and the impact to pricing."

In the section entitled "Price Sources" Mellon states,

> "The official price is the preferred source chosen by Mellon Trust to value a security …The price received from the official price source is used in clients' portfolio valuations, unless it is determined to be inaccurate."

The letter continues,

> "…The assignment of the official price source is based on the asset type and the vendor products to which Mellon Trust currently subscribes."

A listing entitled "Official Price Source" delineates Mellon's official pricing sources (Merrill Lynch, IDC, Trepp, J.J. Kenny, Telesphere, FRI Corporation, Reuters, Prudential American Securities, Inc. and Street Software Technology).

The cover letter states,

> "Occasionally, our clients have requested information regarding the pricing sources and methodologies used by Mellon Trust in reporting the valuation of assets we custody. As this information is of interest to all of our clients, we felt a distribution of our Pricing Standards would be appropriate."

The letter includes an attachment relating to pricing standards. The following is a summary of that document.

As noted, the official price is the preferred source chosen by the custodian to value the security. The official price source may be changed if it was misassigned, if the official price source is not pricing a particular asset, if the pricing methodology is not appropriate for a particular asset, or if an alternative source has a more relevant price. The document lists supplemental price sources as Bloomberg, *Wall Street Journal, Financial Times,* Morgan Stanley, brokers, client-preferred sources, clients, and investment managers.

The paragraph addressing client-preferred sources states,

> "Client price sources are treated as alternate sources and the prices are either

> automatically loaded or manually entered at the client holdings level. Since client preferred sources are not considered official, price quality, coverage, and consistency are not monitored."

This document also includes as the Price Source for Futures/Options on Futures, Reuters as the Official Vendor and Bloomberg as the "Other Vendor". It indicates that daily pricing takes place.

In a section entitled "Methodologies", Mellon states with respect to Over the Counter Currency Options,

> "Over the Counter Currency Options are priced using a Black Scholes pricing model that takes into consideration the option strike price, expiration date, market risk free rates and applicable volatilities."

Price exception scenarios reviewed by Mellon include circumstances when there is no official price, the official price is not current, and the price varies beyond tolerance. When these circumstances arise, Mellon relies on Manual Pricing or Vendor Manual Prices. Manual pricing consists of seeking broker quotes or calculating prices internally. The document states,

> "If all the aforementioned sources have been exhausted, investment managers are contacted for a price as a last resort. Examples of these difficult to price securities include defaulted equity issues and privately placed debt issues."

According to Mellon, commingled funds, partnerships, and real estate assets "are priced by the accounting teams from statements received from the fund, partnership, or investment manager."

The document concludes with a section entitled, "Client Overrides" which states,

> "Client price overrides are processed at the client holdings level. They usually represent exceptions where the investment manager's price and the Mellon Trust's official price vary beyond a tolerance established by the client. Client price overrides are not processed unless rules for price overrides have been established by the client and communicated to Mellon Trust through the Accounting Manager or Client Service Manager."

In at least two instances Mellon did use the manager's prices in valuing holdings in the MRB account. In one case, the holdings were Norfolk Southern (Mellon price – 106.001, IR&M price 112.238) and Delta Airlines (Mellon price 97.652, IR&M price 92.144) in the Income Management & Research portfolio.

On October 10, 2002, James Mahoney, Client Service Manager for Mellon Global Securities Services emailed O'Neil of the MRB and stated,

> "As discussed yesterday, we have 2 large pricing discrepancies for Income Research for September's month end. In order for us to reconcile them correctly we will need to price 2 securities with their prices. Could you please have the below letter signed and faxed back to me as soon as possible."

An attachment entitled "income research.doc" appears at the bottom of the email.

A note appears on the copy of the email that PERAC reviewed that states,

> "Gus had conf. call w/IRM & Mellon. Mellon goes through 2 sources for pricing. IRM does have correct price. O.K. to sign. IRM will check prices @ end of mo."

On the same day, a letter was sent from Fahey to Mahoney. It states:

> "Please let this letter serve as authorization to utilize pricing information from Income Research and Management Account MCRF0862002 for the following two securities:
>
> | | | | |
> |---|---|---|---|
> | 655844AF5 | Norfolk Southern - | Mellon price 106.001 | IR&M price 112.238 |
> | 247367AV7 | Delta Airlines - | Mellon price 97.652 | IR&M price 92.144 |
>
> This authorization pertains only to September's month-end.
>
> We appreciate your assistance in carrying out this request."

In the other instance of which we are aware, Fahey sent a letter to Mahoney on January 17, 2003, stating,

> "In order to reduce pricing discrepancies between Mellon and Income Research, please let this letter serve as your authorization to utilize pricing information directly from Income Management & Research account – MCRF086202002 for the pricing of securities in their portfolio. This authorization shall remain in effect through June 30, 2003 month-end."

This material reflects a formal process that was in place to provide for client authorization when pricing discrepancies arose between Mellon and one of the MRB managers. In the October case, Mahoney appears to have first raised the problem and initiated the process. A conference call between Mellon, the manager and WIC confirmed the discrepancy and, according to the note on the email, resulted in a conclusion that the manager values were accurate. Mahoney emailed the MRB requesting authorization to use the manager values. An authorization letter dated the same day was then provided to Mellon.

The text of the authorization letters establishes a limited time period during which the MRB authorized Mellon to use manager values. In one instance, the authorization dealt with two specific holdings and, in the other instance, the authorization appears to have applied to the entire account of that manager.

In the material reviewed by PERAC, there was no indication that similar correspondence or a similar authorization by the MRB had taken place with respect to the CFM account.

However, PERAC did review a letter from another client of CFM who also had Mellon as its custodian. The CFM account for that client traded in essentially the same way as the CFM account for the MRB. That letter was addressed to David Stanton, Accounting Supervisor, Mellon Trust. It states,

> "This is in regards to Cambridge Financial Management's monthly pricing. Please override Mellon Trust's current vendor pricing to Cambridge Financials prices monthly."

Although PERAC did not review the custodian agreement between Mellon and that client, this provides an example of an authorization from that client to use CFM's prices. That authorization, unlike the MRB authorizations for IR&M, is open ended with no time limit on the period during which CFM prices were to be used by Mellon.

This letter is important for another reason. It indicates that Mellon was independently pricing the CFM holdings for this client prior to the authorization to use CFM prices. The client specifically instructs Mellon to override the "current vendor pricing".

CFM Contract Reconciliation

The MRB/CFM contract states:

> "2. CFM will reconcile books and performance with the custodian bank on a monthly basis. It is instrumental to have <u>compatibility in the pricing sources</u> of the hedging instruments." (compatibility in pricing sources underlined in text).

Material reviewed indicates that some form of monthly reconciliation did take place between CFM and Mellon. Included in CFM's submissions to PERAC, in response to the Order, are copies of all the monthly portfolio summaries Otis prepared for Mellon. These reports, and the options prices contained in them, were the basis of Mellon's monthly portfolio reports to MRB and WIC. The submissions also include snippets of correspondence between Otis and the account specialists at Mellon. The following is a summary of observations derived from an analysis of these reports.

From the inception of the account, CFM's monthly reports to Mellon included a breakdown and listing of realized gains and losses from the purchased options. It is unclear from these reports how, or even if these losses were incorporated into the calculation of net assets since the front page reconciliation summary included no explicit entry for realized gains or losses; this trading activity was included as part of the backup to the report. Nevertheless, one thing is clear, considerable losses were being incurred and realized. Keeping in mind the initial trading account of $4 million, about $7.3 million in losses were taken in the year 2001 alone, more than half of which occurred during the final three months of the year. Not coincidentally, the value of written options rose considerably during 2001, from $1.4 million to $12.5 million in premiums received, with more than half of this occurring during the final quarter. Beginning in April 2002, the practice of reporting and breaking down trading losses was stopped without explanation.

WIC stated that it relied on Mellon for this reconciliation process on the basis of Mellon's promises to deliver reports that were the product of a "rigorous" process. According to WIC Mellon never indicated that it could not reconcile the CFM account as it was reconciling all other MRB accounts.

The MRB stated that Monthly Valuations of the portfolio were prepared by Mellon which were relied on by both MRB and WIC. Further, a variety of services were provided by Mellon including all those services and duties set forth in the Mellon Custodian Contract with MRB as well as the representations and warranties in Mellon's RFP. MRB stated,

> "More specifically, Mellon guaranteed that the monthly valuations provided to both WIC and MRB would be '100% accurate'. To ensure this accuracy, Mellon would be employed to continually and automatically monitor our account. On a monthly basis an account supervisor was supposed to conduct a 'final audit' before authorizing production of the monthly reports to us. As a further 'guarantee of accuracy', the month end report package with the investment managers included a reconciliation letter, which must be signed by an authorized member of the investment firm and returned to Mellon Trust. Our account supervisor was supposed to insure that these reconciliation letters were returned promptly and that any necessary adjustments were processed immediately. Mellon assured us that it received automatic pricing feeds from numerous vendors on a daily basis and that for securities not priced by vendors Mellon had a 'dedicated pricing unit'. We were assured that 'Mellon Trust continually apprises the managers of their portfolio's trading status, daily short term investment balances and upcoming account activity. The advisor services group handles manager inquiries dealing with trades and securities in the manager's accounts following receipt of their monthly accounting reports. Alternatively, the service delivery specialist handles pricing, accounting and reporting and all client inquiries.'"

Specifically, Mellon services provided to both WIC and MRB with respect to currency options stated, "over-the-counter currency options are priced using a Black-Scholes pricing model that takes into consideration the option strike price, expiration date, market risk free rates and applicable volatilities." Mellon assured both WIC and MRB that its month end reconciliation process was a "rigorous" and "time consuming" task and that broker quotes would be sought if feasible.

These are the services that Mellon agreed to provide to MRB as described by the MRB. According to the MRB, based on the failure of Mellon to provide these services, neither MRB nor WIC were made aware of the true value of the CFM account until after Kneafsey's death.

A letter dated March 6, 1997 from Heiner, Officer, BSDT to O'Neil, Coordinator of Investments, MRB reviews "trade processing enhancements" that Mellon Trust will be implementing. In relevant part the letter states:

> "We have also evaluated numerous options and strategies for servicing the trade processing of specialized investments such as futures, options, swaps and forwards. A dedicated specialist investment group has existed in our Pittsburgh environment for a number of years, and we have concluded its expertise should be leveraged for the benefit of all Mellon clients investing in these types of securities."

In addition, it should be noted that Mellon was the counterparty on approximately half the transactions with CFM and consequently, at least with respect to those trades, would have accurate pricing and valuation information. It appears from the material reviewed by PERAC that the Mellon Foreign Exchange desk did not communicate with the Mellon Custody Client Services Group about the valuations of these holdings. Similarly, the Custody Client Services Group did not communicate with the Foreign Exchange Desk about those valuations.

PERAC Conclusions

Based on the material reviewed, PERAC concludes:

1. Although it now appears that Mellon either failed to comply with its own pricing standards or acted under contractual provisions to rely on CFM valuations, MRB and WIC had every reason to believe that it would price the account independently, particularly because Mellon FX was counterparty on numerous CFM trades and that desk could have been a source of the actual prices of the options being traded. Mellon indicated to the MRB that securities not priced by vendors were priced manually, with the assistance of "market makers". In that context, Mellon FX would be such a market maker. Furthermore, currency options are traded in a market with a number of participants and Mellon could have easily priced them using any number of resources available to it. Finally, the letter from Heiner to O'Neil stated that the custody group would be accessing the expertise of "a dedicated specialist investment group" for those clients investing in futures, options, swaps and forwards.

The MRB did not act in an unreasonable manner in relying on the Mellon custodian reports in assessing whether or not the account on a net basis was achieving gains or losses. This observation is distinct from the issue of whether Mellon properly relied on CFM values. It was reasonable for the MRB to expect that those values would be accurate.

2. The MRB and WIC relied on Mellon and the warranties provided by Mellon. Mellon did not inform the MRB that it would not price the CFM holdings. The fact that Mellon did, on several occasions, seek permission to use manager's prices in regards to other accounts buttressed the belief on the part of the MRB that pricing was indeed accurate with respect to other accounts including CFM. However, on at least one occasion, Mellon made reference to use of CFM values in communication with WIC.

3. The only reports MRB received throughout most of the account history regarding the CFM account were the monthly custodian reports that included data on all MRB managers as well as CFM. The MRB did no independent analysis of these reports, but relied on WIC. WIC stated that the Russell/Mellon performance reports formed the "core" of the WIC review process. Those reports were based on the false valuations that CFM provided to Mellon.

4. Based on material reviewed, it appears clear that the MRB never provided Mellon with an instruction to use CFM values and furthermore, it appears clear that the MRB was unaware of the fact that the valuations were false until after the death of Kneafsey.

5. Based on the material received and the responses to questions from the parties, PERAC finds that neither the MRB nor WIC adequately monitored the reconciliation process.

6. The reason the loss reached the level that it ultimately did is that the MRB remained unaware of the true value of the account until Kneafsey's death. Central to that development was the deception perpetrated by CFM upon MRB. PERAC's investigation has reviewed many elements of the investment by the MRB with CFM; however, at the center of the loss is the deception in valuation that prevented the MRB and WIC from readily assessing the true value of the holdings. Thus, while there may have been other indicators that should have caused concern, the primary indicator, the value of the account did not reflect the truth. Litigation is proceeding with respect to the reliance of Mellon on the values provided to it by CFM. CFM used this arrangement to grossly falsify portfolio valuations in order to hide mounting trading losses from the MRB.

7. The MRB, in meeting its responsibility to monitor CFM, had an obligation to look beyond the net value of the account set forth in the monthly custodian report.

8. The account strategy changed dramatically and morphed from currency overlay into overt speculation. In the material received and in responses to questions the MRB, WIC, and CFM refuse to acknowledge this fact. Thus, although the false prices that CFM submitted to Mellon and that were subsequently the basis of the Mellon

reports to the MRB helped to mask the losses that CFM was incurring, those losses were the result of trading activity that was clearly not currency overlay. The MRB and WIC received information on a regular basis that indicated that the CFM account was no longer a currency overlay account. The Mellon custodian reports contained data that revealed holdings far in excess of those needed to protect the equity accounts that CFM was purportedly protecting. In addition, those reports showed trading activity that was not currency overlay trading, as well as written options far in excess of the magnitude associated with currency overlay.

9. It is clear that other communication took place on at least two occasions between MRB and Mellon in which MRB instructed Mellon to use manager values. Furthermore, with respect to the CFM account of another client of Mellon, client instructions to use CFM values were sent to Mellon and that letter supports the conclusion that Mellon had been independently pricing CFM holdings.

CFM Reports

Based on information submitted pursuant to the PERAC Order, CFM provided MRB with monthly reports in the early months of the account (September 1999 - July 2000 with some exceptions) and in July 2001. In a meeting with PERAC, Fahey confirmed that the MRB did not receive direct reports from CFM for the period July 2000 to July 2001 and from July 2001 through the end of the account history. This was also confirmed by Otis, who informed PERAC that the monthly reports CFM had been providing to the MRB were "burdensome and complex". According to Otis, these reports ceased and in lieu of them, the MRB received the Mellon, Russell/Mellon, and WIC reports. Both the MRB and WIC asserted that no violation of the contract took place as CFM reported to Mellon as to value and Russell/Mellon as to performance.

The contract between the MRB and CFM also required CFM to provide quarterly performance reports to WIC. That does not appear to have occurred.

As noted, CFM reports to the MRB were non-existent after July 2001. However, in July 2000 and July 2001, CFM provided reports to the MRB that, in light of a careful reading, contained many indicators that CFM had deviated dramatically from its mandate. These reports revealed information that signaled or should have signaled to the MRB and WIC that issues existed with respect to the CFM account. The July 2001 report also formed the basis of a presentation made by CFM to the MRB at a Board meeting.

July 2000 Cambridge Financial Management Report

A twelve-page report prepared by Kneafsey was sent to O'Neil, MRB Director of Investments, and copied to Aristizabal of WIC, on July 27, 2000. This report was intended to present performance data and a general discussion of the currency overlay program since its inception in September 1999 through June 2000.

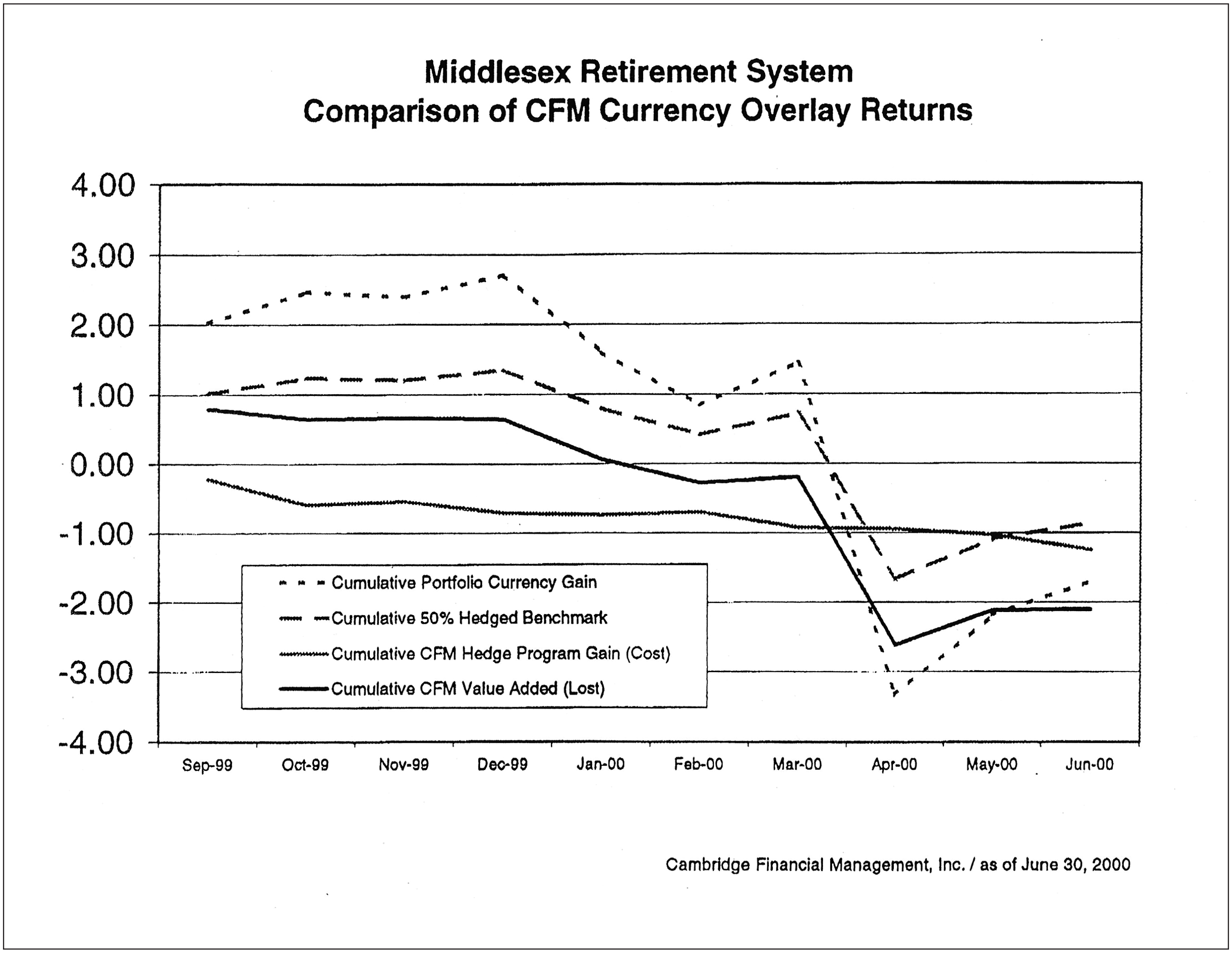
Table 3 of the July 2000 report, titled "Sum of All Open Bank Option Positions", showed that, in apparent violation of the account guidelines and Kneafsey's stated strategy, options were being written. Kneafsey's reference to Table 3 in his narrative mentions only the long positions and does not call attention to the written options.

Table 4, "Summary of All Closed Bank Option Positions", showed that a trading loss of $141,600, representing 3.5% of the initial $4 million trading account had been incurred in June.

Table 5, "Summary of Changes in Net Asset Value", showed a total realized trading loss since inception of $626,165, representing over 15% of the initial allocation.

Table 6, "Summary of Performance Data", showed the account trailing its benchmark by 2.771% year-to-date and 1.919% since inception. Kneafsey's narrative did not dwell on or explain the underperformance year-to-date or since inception, but it did point out that the account outperformed the benchmark by .02% for the month of June.

The last page of the report was a graph titled "Comparison of CFM Currency Overlay Returns", which clearly showed that cumulative value added by the account had been negative for the past several months.



Tables One and Two of the July 2000 report do show CFM's analysis of the country weightings of the three equity accounts assigned to him and how the currency overlay related to these holdings. Nevertheless, Kneafsey's characterization of the currency trends at the time as a "surprise", "erratic", and "atypical" seemed to confirm the fact that the markets were not following trends that were conducive to his strategy being profitable.

Cambridge Financial Management, Inc.
May 2000 Report

Table 1
Cambridge Currency Overlay
Middlesex Retirement Percentage Allocations
for $46.8 Million
As of June 2000

Country	Irish Life $21.4 mil	Irish Life Dollars	Putnam $13.9 mil	Putnam Dollars	BOI $11.48 mil	BOI Dollars	Totals	% of Total $46.8 mil.
EUROZONE								
Finland	n/a	n/a	3.6	$505,704	-	$0	$505,704	1%
France	n/a	n/a	14.5	$2,018,638	9.3	$1,068,144	$3,086,782	7%
Germany	n/a	n/a	2.1	$298,129	3.5	$398,544	$696,673	1%
Ireland	n/a	n/a	1.9	$261,907	-	$0	$261,907	1%
Italy	n/a	n/a	1.8	$246,583	3.1	$356,048	$602,631	1%
Netherlands	n/a	n/a	9.0	$1,256,599	11.0	$1,263,396	$2,519,995	5%
Portugal	n/a	n/a	-	$0	0.3	$34,456	$34,456	0%
Spain	n/a	n/a	1.4	$199,217	2.5	$287,136	$486,352	1%
sub total:	39.9	$8,528,904	34.4	$4,786,777	29.7	$3,407,724	$16,723,405	36%
EUROPE								
Denmark	0.0	$0	-	$0	0.6	$68,913	$68,913	0%
EMU	0.0	$0	0.6	$78,015	-	$0	$78,015	0%
Norway	0.0	$0	-	$0	-	$0	$0	0%
Sweden	3.1	$662,647	4.2	$585,112	1.1	$126,340	$1,374,099	3%
Switzerland	5.0	$1,068,785	7.8	$1,086,637	8.3	$953,290	$3,108,712	7%
UK	10.6	$2,265,624	19.7	$2,750,028	28.0	$3,215,918	$8,231,770	18%
sub total:	18.7	$3,997,256	32.3	$4,499,793	38.0	$4,364,460	$12,861,509	27%
JAPAN								
Japan	22.8	$4,873,660	14.1	$1,957,340	20.1	$2,308,569	$9,139,569	20%
PACIFIC RIM								
Australia	6.8	$1,453,548	1.4	$190,858	3.6	$413,475	$2,057,881	4%
China	0.0	$0	1.8	$246,583	-	$0	$246,583	1%
Hong Kong	3.7	$790,901	0.9	$119,809	2.5	$287,136	$1,197,845	3%
Malaysia	0.1	$21,376	-	$0	-	$0	$21,376	0%
New Zealand	0.0	$0	-	$0	0.1	$6,891	$6,891	0%
Singapore	2.3	$491,641	0.7	$97,519	1.6	$183,767	$772,927	2%
South Korea	0.0	$0	3.2	$445,800	0.6	$72,358	$518,158	1%
Taiwan	0.0	$0	1.5	$206,182	-	$0	$206,182	0%
Thailand	0.3	$64,127	-	$0	-	$0	$64,127	0%
sub total:	13.2	$2,821,592	9.4	$1,306,751	8.4	$963,627	$5,091,970	11%
OTHER								
Brazil	2.1	$448,890	0.3	$39,007	0	$0	$487,897	1%
Canada	0.0	$0	3.7	$519,636	0	$0	$519,636	1%
Mexico	0.0	$0	1.5	$210,362	0	$0	$210,362	0%
sub total:	2.1	$448,890	5.5	769,004.9	-	-	$1,217,895	3%
Totals:	96.7	$20,670,302	95.6	$13,319,667	96.2	$11,044,380	$45,034,349	96%
Cash	3.3	$705,398	4.4	$611,582	3.7	$429,555	$1,746,535	4%
sub total:							$46,780,883	
Forwards					0.1	$11,485	$11,485	0%
Grand Total:	100.0	$21,375,700	100.0	$13,931,248	100.0	$11,485,420	$46,792,369	100%

Note: Irish Life continues small currency hedges as follow: Long: Swiss Franc (+1.6%), and Short: Australian Dollar (-2.1%), Euro (-3.0%), Sterling (-0.5%).
CFM will continue to watch these allocations carefully in order to avoid overhedging in these areas – the current minor level of Irish Life hedge involvement is not believed to be significant.

Also, Irish Life does not provide country percentage allocations within the general "Eurozone" category.

Cambridge Financial Management, Inc.
June 2000 Report

Table 2
Cambridge Currency Overlay
Middlesex Retirement Performance Data
for $46.8 Million
For the Month of June 2000

Currency Group Currency	Group % of Total	Spot 05/31/00	Spot 06/30/00	% Change US Dollar	Portfolio Weight[A]
EUROZONE	**36%**				
euro		0.9572	0.9627	(0.57)	(0.207)
EUROPE	**27%**				
Sterling & Non Eurozone		1.5605	1.5685	(0.51)	(0.138)
JAPAN	**20%**				
Japan		105.40	104.82	(0.55)	(0.110)
AUSTRALIAN DOLLAR	**4%**				
		60.43	60.63	(0.33)	(0.013)
PACIFIC RIM & OTHERS[B]	**9%**			(0.09)	(0.008)
Total Weighted Portfolio:	**96%**				**(0.477)**
Total Currency Gain (Loss):					**0.477**

Standard EAFE Equity Gains (Local Currency)	1.27	
Standard EAFE Equity Gains (in US Dollars)	3.80	
Standard EAFE Currency Gain (Loss):	**2.53**	
50% Hedged Benchmark (against Weighted Portfolio)	**0.238**	
Weighted Portfolio Currency Gain:		0.477
Hedge Program Gain (Cost) -- from Table 6 - including fees:		(0.218)
Total Weighted Portfolio Return minus Hedge Program Gain (Cost):		**0.259**
Out(under)performance to 50% Hedge Benchmark[C]:		**0.020**

Notes:

[A] Portfolio Weight is calculated by multiplying "Group % of Total" by "% Change US Dollar" for each currency.

[B] The "% Change US Dollar" for the "Pacific Rim and Others" was calculated in a similar fashion to the major currency groups above by multiplying each country's weight by its change in the value of the US Dollar.

[C] Weighted Portfolio Return minus Hedge program Cost as compared to 50% Hedged Benchmark.

Based on the information submitted to PERAC, there were no further reports directly from CFM to the MRB for a full year. A report addressed to O'Neil (and copied to Aristizabal) on July 17, 2001 was intended to discuss the program's results from inception through June 30, 2001.

Conspicuous by its absence from the July 2001, report was a listing of the country exposures of the underlying equity accounts and how the currency overlay related to those exposures. This contrasted with the July 2000 report that did report on those aspects of the account.

The July 2001 report touted an extraordinary cumulative gain of $921,230 as of June 30, representing a return of 23% on the original $4 million investment. Such a hefty return would have been highly unusual for a conventional currency overlay account to have achieved. Adding to possible suspicions about this number was that the report gave no details about how it was achieved. If this return had been at all credible, CFM would have presented a logical attribution analysis explaining how it was achieved, such as through large and successful trading bets for or against certain currencies.

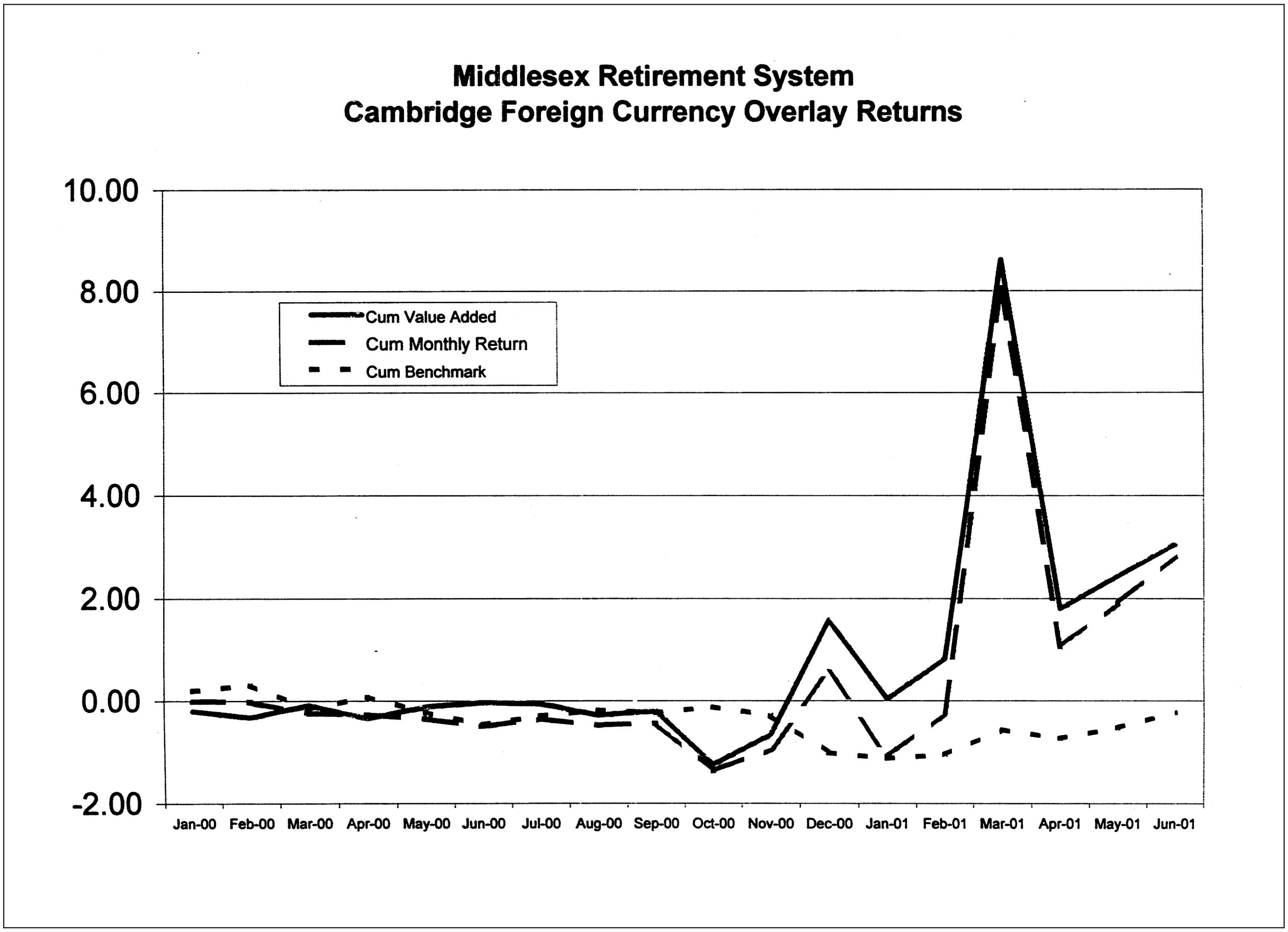
The credibility of the 23.6% cumulative return was further questioned by the confirmation in Table One of the report that only seven months prior, on November 30, 2000, the net asset value of the account had fallen from its original $4 million to $3.06 million, a loss of 25%. In the period from November 30, 2000 to June 30, 2001, the return indicated by these numbers is 48.6%.

That table also indicated that the account began to experience unusually high volatility during the last quarter of 2000. After a loss of 13.6% during October, the account gained 21.8% in December and after an astonishing gain of 109.9% in March 2001, the account lost 45.4% in April. This type of volatility should certainly have been eye opening to anyone reading it. Even the reported gains of 8.8% and 9.4% for May and June were above what should be expected from a conventional currency overlay account, especially during a time of no extraordinary movements in the currency markets.

The extraordinary volatility in the account's monthly performance would have and should have raised suspicions that the account was either experiencing a super-aggressive level of trading activity or engaging in trading strategies well outside the parameters of the account's guidelines. It turns out that the account was involved in both practices.

The report, unlike its predecessor of July 2000 and contrary to what would be expected in a periodic performance review by a manager, contained no information at all on the actual positions and exposures in the options portfolio, or on realized and unrealized trading gains or losses. There was no disclosure of any type indicating that the impressive, but highly suspect reported performance as of June 30, 2001 was in reality largely due to the infusion of $5.8 million in premiums received for options written and was also a reflection of CFM beginning to falsify valuations of options.

The following chart included in the report reflects the volatility noted above as well as an indicator of a change in the return behavior of the account. The chart outlines the cumulative added value, the cumulative monthly return, and the cumulative benchmark. It shows a spike below the benchmark in the September 2000 to November 2000 period, a spike above the benchmark in the November 2000 to February 2001 period, and a significant spike above the benchmark in the March 2001 to May 2001 period. Finally through June 2001, the return remains above the benchmark. Clearly, account performance, and one presumes style, changed dramatically during this period.



March was an extraordinary month for the CFM/Middlesex account. A gain of $3,967,035 was reported, which represented a return of 109.88% relative to the existing $3.6 million net asset value of the account and 8.3% relative to what CFM reported as the "hedged value" of the underlying equity accounts. March was a strong month for the dollar against the yen and other currencies; dollar strength contributed to the losses of almost 7% suffered by the underlying equity accounts that month. Nevertheless, it is not apparent from CFM's portfolio that it had been positioned for an extraordinary gain of this magnitude and Kneafsey's narrative report of July 17, 2001 gives no discussion of performance attribution that would explain this gain or indeed any of the significantly greater volatility that had begun to be apparent during the previous several months.

March 2003 was the only month for which Analytic Investors did a complete option-by-option price verification analysis, but it appears likely that March 2001 was the first month that saw CFM report significantly inflated option prices to the custodian bank for performance evaluation purposes. During the month, reported "unrealized gains" rose from $570,955 to $4,872,286; the only "realized" transactions were losses of $350,000. March also saw a rise of about $2.0 million in premiums received from written options, the largest month of option writing to date; as is now apparent, CFM used cash received from option writing primarily as a way to cover up substantial trading losses, and these written options were not marked to market during this period.

At the very least, the unexplained extraordinary return of March 2001 (followed by most of the gains being given back during the succeeding month of April in the absence of a corresponding move in the currency markets) reported on Tables I and II of CFM's July 17, 2001 report, and the huge spike noted in the graph "Cambridge Foreign Currency Overlay Returns" from that report, should have served as a red flag that this account was perhaps no longer being managed as a conventional currency overlay account consistent with account guidelines.

A return over 8% above the benchmark in currency overlay for any period should have raised questions as to the management of the account and whether or not CFM continued to invest according to its mandate.

A comparison of the chart accompanying the July 2001 report and the chart accompanying the July 2000 report underscores the changes in the CFM account management. The July 2000 chart tracks:

1. the Cumulative Portfolio Currency Gain
2. the Cumulative 50% Hedge Benchmark
3. the Cumulative CFM Hedge Program Gain (Cost), and
4. the Cumulative CFM Value Added (Lost).

In contrast, the July 2001 chart tracks:

1. Cumulative Value Added;
2. Cumulative Monthly Return, and
3. Cumulative Benchmark.

The amendments to the items that are tracked and displayed on the charts should have raised some questions. Perhaps more tellingly, had the MRB and WIC insisted on regular CFM Reports in the period between July 2000 and July 2001, a clearer picture would have emerged as to the reason for this change.

Direct written communication between CFM, MRB, and WIC was infrequent from inception through July 2001 and then appears, with the exception of Kneafsey's participation in the annual MRB Spring Conference, to have totally stopped. In the two major reports discussed above, Kneasfey doesn't explicitly state that he has departed, in an increasingly significant manner, from his stated strategy, but a close and careful reading of those reports offered a substantial amount of worrisome hints about the alarming direction in which the account was going.

In addition, under PERAC Regulation 840 CMR 16.07, the MRB was obligated to meet with CFM at least once a year. In early 2000 Fahey, as part of a series of meetings with managers, met with Kneafsey and losses were discussed. Material reviewed by PERAC indicates that Kneafsey attended only one MRB meeting during the account history. That meeting took place in July 2001. Otis, in response to a PERAC question asking how many meetings took place between CFM and the MRB, stated that there were at least two meetings a year, plus the MRB conference. The last meeting, as she recalled, was in the summer of 2001. She added that CFM did not meet with WIC separately. In the material provided, there is no record of meetings with Kneafsey by the MRB or WIC after the presentation in July 2001. It appears that Kneafsey did attend the annual conference sponsored by the MRB. On May 21, 2003, in a conversation between Dennis of PERAC and Aristizabal and Early of WIC, Dennis was informed that no one had met with CFM since the summer of 2001.

PERAC Conclusions

Based on the material reviewed, PERAC concludes:

1. The reporting of performance by CFM did not comply with AIMR standards. The MRB referred questions relative to this issue to CFM and WIC. The WIC stated, that in light of the facts that became known after Kneafsey's death in April 2003, it appears that neither CFM's reports to Mellon nor Mellon's reports to MRB comply with AIMR standards.

2. The reports directly from CFM were received by the MRB for only a relatively short period of the account existence. In any event, material reviewed and responses to inquiries do not indicate that the MRB or WIC ever checked the performance numbers provided by CFM or Mellon to determine if those numbers were calculated in accordance with the AIMR standards, as required in the contract between the MRB and CFM.

3. At no time did CFM inform either the MRB or WIC that losses in the portfolio exceeded 3% of the total equity under management or had exceeded the amount originally dedicated to the program ($4 million), as required by the MRB/CFM contract.

4. The MRB and WIC failed to act on clear indications in the July 2000 and July 2001 reports that something extraordinary was occurring in the CFM account.

5. No reports were provided by CFM to the MRB or WIC from July 2000 to July 2001 and no reports were provided by CFM to the MRB from July 2001 to the end of the account history. These included monthly reports to the MRB/WIC, quarterly reports to WIC, and annual meetings with the MRB. Consequently, either CFM was in violation of the contract or the MRB did not require such reporting. The MRB/CFM contract stated that CFM was to provide reports on an as requested basis but "should" do so twice a year "or whenever the Board considers appropriate." Neither the MRB nor WIC requested reports directly from CFM in the period after July 2001.

6. The lack of direct reporting from CFM to the MRB for the period during which the account sustained much of the ultimate loss incurred foreclosed the possibility that, as a result of the scrutiny of information provided directly from CFM, the MRB or WIC could have become aware of the extent to which CFM was engaged in speculation.

Mellon Portfolio Reports

The monthly Mellon portfolio reports also provided ample signals that there was something seriously amiss in the CFM account and that CFM was no longer investing according to its contractual mandate. The MRB and WIC failed to notice these indicators or failed to recognize the implications of the data that was received from Mellon.

Although the reports employed the false values provided by CFM to Mellon, the trends revealed by that data should have signaled the fact that CFM was no longer engaged in currency overlay. The following summarizes the valuation history on a quarterly basis:

CAMBRIDGE FINANCIAL/MIDDLESEX ACCOUNT

SUMMARY OF TRENDS AND POSITIONS ACCORDING TO MELLON'S REPORTS

	Options Written	Unrealized Gain	Options Purchased	Unrealized Gain	Net
DEC 2001	$12,542,300		$8,026,526	$8,479,250	$3,954,792
MAR 2002	$14,218,160	$1,245,060	$6,740,527	$9,536,271	$3,338,441
JUNE 2002	$14,806,895	$4,845,794	$6,316,615	$7,383,640	$1,339,540
SEPT 2002	$19,666,851	$2,433,651	$2,849,354	$17,451,090	$1,312,797
DEC 2002	$23,645,492	$3,567,591	$5,420,053	$15,998,550	$1,526,880
JAN 2003	$28,134,735	$735,736	$8,124,742	$20,779,900	$1,605,982
FEB 2003	$29,164,594	$2,263,493	$7,556,947	$21,036,800	$1,737,390
MAR 2003	$29,431,364	$3,826,064	$5,750,949	$21,485,950	$1,675,308

Thus, in spite of the account showing a slight positive net status, the level of option written and unrealized gains thereon, and the level of options purchased and unrealized gains thereon were grossly inconsistent with the mandate of CFM of protecting the value of the underlying equity portfolios from the impact of currency fluctuation.

Monthly Custodian Reports

Beginning in early 2000, the front page of the monthly Statement of Net Assets showed an entry for "written options" under the Liabilities column. Not only were written options precluded by the account guidelines, but it became obvious that exposure from written options was increasing at an alarming rate to magnitudes clearly inappropriate to the scope of CFM's mandate. Premiums received for written options were $5.8 million as of December 31, 2001, $23.6 million by December 31, 2002, and a startling $29.5 million by March 31, 2003. Although these important numbers were clearly evident on page one of the monthly portfolio summaries from Mellon, there is no record of either MRB or WIC ever discussing or questioning the magnitude of CFM's use of written options. As noted above WIC has stated that on one occasion it did note that CFM was writing options and that Aristizabal had informed the Board that in so doing CFM had substantially increased the risk involved in the portfolio. Although acquiescence to such a dramatic change in strategy should have resulted in more aggressive monitoring of the CFM account by the MRB and WIC, no such action took place.

The front page of Mellon's monthly reports provided a strong hint of one of the other main aspects of the CFM loss: the grossly inflated options valuations. During the first year and a half of the account, reported unrealized gains (rare) and losses (frequent) were a generally small and reasonable percentage of the asset base, but in March 2001, the portfolio began to show a large and increasing entry for unrealized gains. An explanation of why unrealized gains, in the absence of any major moves in the currency markets or any other explanation from CFM, rose from $217,424 on December 31, 2000 to $8,479,250 on December 31, 2001 should have been sought from CFM. Inside the report the portfolio holdings would have revealed that a substantial rise in position size and total option holdings (representing a leveraging of the portfolio accomplished through option writing) had taken place and some very questionable valuations of purchased options were listed.

In the second half of 2002, recorded unrealized profits rose from $7.4 million to $16.0 million by year-end. The entry of $21.5 million of unrealized profits as of March 31, 2003, based on $4.3 million in premiums, recorded the status of the fictional valuations as of the final date of CFM account management. A review of these entries over the last year of the account would have led inside the report to the portfolio holdings where nearly every purchased option was priced at huge, unrealistic multiples of its cost, usually within a very short time after purchase.

PERAC Conclusions

Based on the material reviewed, PERAC concludes:

1. The fact that options were being written in amounts that became grossly disproportionate to the size of the account was clear on page one of every monthly custodial report from the spring of 2001 until the end of the account history. What was also clear was that these written options were not marked to market, but carried at cost for the first two years. When they began to be market priced, the fact that they consistently and without exception showed market appreciation, should have also signaled problems in the account. (The fact that CFM was adding to written options at an alarming rate was itself an indicator that

the underlying options, both long and short, were not making money but were indeed losing money.)

2. A more comprehensive review of the monthly Mellon reports over the account's final two years would have also given clear indications of other major aspects of the deteriorating situation. Not only by simply observing the notional value of the purchased and written options in the portfolio, but also by using conventional quantitative techniques to calculate actual exposures; it was evident that the option positions in the portfolio represented currency exposures far in excess of what would have been reasonably expected in the context of CFM's mandate relative to the underlying international equity accounts.

3. The transactions summaries in the reports recorded that trading activity in the account was at a frenetic pace and often of a very short-term nature (positions bought and sold within a few days, often the same day, more often than not at a loss). As an extreme but not atypical example, the January 31, 2002 portfolio showed a month-end holding of 200,000 notional value of yen/dollar puts, but CFM actually bought and sold more than 1,000,000 of these contracts during the course of the month.

4. The MRB and WIC failed to review in complete detail the material that was received. The fact that the account was writing huge magnitudes of options, that its positions were far out of proportion to the underlying equity holdings, and that its hectic trading activity was clearly speculative in nature was reflected in the monthly custodian reports. Thus a review of the full report would have revealed the level of trading, the size of the positions, and the magnitude of the written options. This leads to two alternative conclusions:

    a. the MRB was aware that CFM was deviating from its original mandate and was no longer engaged in currency overlay, but rather was speculating in currency options, and the MRB acquiesced in or approved of CFM's change of strategy or

    b. the MRB did not review or failed to realize the implications of the activity reflected in the custodian reports. In either case, the MRB directly, and through its consultant WIC, did not properly monitor the activity of CFM.

Mellon Billing/CFM Trading

The fee schedule governing the custodian relationship between the MRB and Mellon provided for a per transaction fee for trading. MRB was billed for transactions at Mellon's standard rates when volume exceeded levels set forth in the schedule during any one year. That schedule provided that MRB will pay:

1. $40 per option round trip in excess of 50,
2. $30 per foreign exchange executed outside of BSDT.

Mellon charged trading fees related to the CFM account on a quarterly basis as follows:

PERIOD ENDING	FEES	
09/30/99	$-	
12/31/99	$342.48	
03/31/00	$2,024.30	
06/30/00	$2,595.36	
09/30/00	$4,119.38	
12/31/00	$7,920.98	
03/31/01	$14,925.60	
06/30/01	$17,961.61	
09/30/01	$13,522.86	
12/31/01	$18,602.91	
03/31/02	$15,673.15	
06/30/02	$22,686.97	(Mellon indicates monthly billing)
09/30/02	$12,490.14	(Mellon indicates monthly billing)
12/31/02	$13,107.02	(Mellon indicates monthly billing)
03/31/03	$14,649.02	(Mellon indicates monthly billing)

In the period from April 30, 2003 to July 31, 2003 a total of $1,460.22 was charged.

PERAC Conclusions

Based on the material reviewed, PERAC concludes:

1. The trading fees are a proxy for the amount of trading that was taking place in the account. As is clear from these amounts in approximately the first year of the account history, trading activity was relatively modest. The third quarter of 2000 saw nearly a doubling of trading activity. From that point until the final quarter of CFM's management of the account the trading activity reflected a number of transactions that, under no conceivable scenario, could be the result of currency overlay. In the quarter ending June 30, 2002, trading fees were over ten times the amount that were charged in the first quarter of 2000.

2. This data represents further support for the conclusion that CFM was not engaged in currency overlay throughout much of the account history but was engaged in frenetic trading behavior indicative of speculation.

3. The data also underscore another missed opportunity for the MRB and WIC. These charges, based on the number of trades made by CFM during these periods, had they been reviewed in detail by the MRB or WIC, may have lead to the realization that there was something seriously amiss in the CFM account.

Brokerage/Transaction Cost Review

The MRB response to questions relating to instructions to CFM regarding transaction reporting focused on monthly statements being filed with Mellon. WIC stated that the MRB "directed CFM to provide transaction reporting to Mellon."

WIC stated that Mellon prepared reports for the MRB relative to transactions costs. The MRB did not address the issue of its receipt and analysis of transaction cost information from Mellon or CFM in response to PERAC inquiries. Instead, the MRB focused on CFM account information received from Mellon stating, that MRB Administrative and Financial staff reviewed that material on a monthly basis. Analysis was limited to determining the beginning and ending balance of the account, unrealized gains and losses, management fees, as well as sales by the system and distributions.

WIC never provided brokerage reports to the MRB relating to trading in the CFM account. WIC stated that Mellon was the "recordkeeper for confirmations of all transactions. CFM did not report brokerage/ transactions costs to WIC but reported this information to the custodian."

In CFM reports, trading costs were not reviewed, rather account performance was outlined and future trends discussed. In the material received from MRB and CFM, there is no indication that MRB requested CFM to send confirmations to other parties. Confirmations were not in the material provided by WIC. The contract between the MRB and WIC required MRB to direct CFM to provide WIC with transaction confirmations, monthly transaction, and/or asset statements provided by broker-dealers other than WIC and by custodians other than Mellon.

The MRB stated that it directed CFM to provide WIC with "transaction confirmations, monthly transaction, and/or assets statements provided by broker dealers other than WIC and by custodians other than the custodian." However, WIC has stated that the MRB directed managers to confirm all transactions with Mellon. In addition, WIC stated that, "It was standard and customary practice for WIC, as investment consultant, not to receive confirmations."

PERAC Conclusions

Based on the material reviewed, PERAC concludes:

1. As noted previously there are no explicit commissions on option trades. However, transaction costs, which are based on the differential between "bid" and "asked" quotes for particular options, can be substantial. Several PERAC Regulations require that Boards monitor transaction costs. These include an ongoing review of brokerage costs, written disclosures of commissions, and disclosures of mark ups and mark downs. There is no indication in the material received and reviewed that MRB ever met its obligation to monitor trading costs specifically with respect to the CFM account.

Both the MRB and WIC, in responding to PERAC inquiries relative to the WIC performance of its contractual obligation to monitor the performance of CFM, referred to the Mellon reports. WIC stated that the MRB never instructed the WIC not to rely on those reports. Conversely, PERAC has reviewed no material that indicates that the MRB instructed WIC to rely solely on those reports.

In responding to an inquiry as to how WIC met its obligation under the provision of its contract related to valuation, the MRB stated, "Valuation of the portfolio was done by the custodian Mellon." According to the MRB, that was the source of the standard of value, "determined in good faith by the consultant to reflect the fair value of the security." WIC stated that it did not value the CFM account or any other MRB account but relied, with knowledge of the MRB, on Mellon's custodial statements and performance reporting.

PERAC inquired of the MRB relative to the analysis that the MRB conducted of the Mellon and Russell/Mellon reports to determine if CFM was in compliance with the contract. The MRB responded that it had engaged WIC as an investment consultant to assist the Board in the review and restructuring of existing investment policies for the retirement system pension fund; a determination of appropriate asset allocation strategies; performing Asset Manager searches, developing Asset Manager guidelines and benchmarks; and evaluating the ongoing performance of the Asset Managers.

The MRB stated that it relied on the WIC in evaluating the ongoing performance of "asset managers". WIC reported to the MRB each month. Specifically the MRB stated,

> "In fulfilling those responsibilities WIC reported to the entire Board on at least a monthly basis. For each meeting WIC prepared an agenda and a written report with respect to review of portfolio manager's performance. WIC established procedures and criteria to review of portfolio manager's performance. WIC established procedures and criteria to determine if portfolio managers should be placed on a watch list, probation, or recommend termination. We are aware that in fulfilling these responsibilities WIC received and reviewed monthly account statements from our custodian, Mellon Bank, indicating market value, unrealized gains and losses and account activity. Additionally, WIC received monthly reports from Russell Mellon, which were also available on Mellon's website and would indicate the current market value of the account, cash value of account, and performance statistics on a one month, three month and year to date basis as well as one year, three year and five year performance evaluation."

According to the MRB at no time during the history of the account was CFM failing to meet the standards set forth in the contract. The WIC stated that it did conduct the reviews mandated by the contract but that, as to the issue of whether CFM met the standards set forth in the contract,

> "At the direction of their respective legal counsel, WIC and MRB are in the process of evaluating the activity in the CFM account in light of the discovery in April 2003 that Mellon's reports were inaccurate".

The MRB stated that it acted to fulfill its obligations based on the reports, meetings and recommendations.

According to the MRB, the content of WIC performance evaluations of CFM were contained in the monthly Russell Mellon Performance Evaluations for which, "MRB and WIC engaged the services of Russell Mellon." WIC stated that to monitor performance, it relied upon account activity and account values reported by Mellon each month and each quarter. WIC representatives then reviewed account performance with the MRB at monthly board meetings, to the extent that there were specific issues that either WIC or the MRB wished to address. Extensive discussion of the CFM account is recorded in the minutes of the MRB as having taken place on only one occasion in July 2001.

It appears from a review of the material provided and the responses to PERAC inquiries that at each month's meeting WIC would review the MRB portfolio. Account activity was reviewed with specific attention paid to those portfolio managers who, applying WIC's criteria, should be placed on "Watch List" or probation or terminated. No such discussion ever took place with respect to CFM. As noted in the material provided that includes minutes of the MRB but no agendas of the meetings, CFM was only mentioned in the context of portfolio review on one occasion when CFM made a presentation to the MRB, reviewing the account in July, 2001.

At no time did the monitoring by WIC result in specific issues that the MRB or WIC wished to raise relative to the CFM account. WIC stated,

> "Based on the information available to WIC before April 2003, no such reports were 'required' by the contract."

The MRB stated that no such review took place because,

> "According to Russell Mellon, CFM's performance was acceptable."

The MRB/WIC contract states that some reports, including quarterly reports, must be required and requested by MRB in the future or specified in a document outside the terms and conditions set forth by this contract. Although the MRB stated that it did make a request of WIC for such evaluations, WIC stated,

> "MRB requested and received monthly reports from Mellon, including custodial account statements and the performance reports available through Mellon's website. In addition, WIC provided quarterly asset allocation reports."

In the material provided to PERAC, a "Middlesex Retirement System – Manager and Asset Allocation Review – March 27, 2003" was included. That document reviewed each MRB manager and assesses performance as of December 31, 2002. The page dealing with CFM indicated slightly positive returns over three years, two years, one year and in the latest quarter. The document indicates that over the same periods the "50% Hedged – CFM 50% Hedged" had negative returns of - 2.64% over three years, - 3.44% over two years, - 6.14% over one year and - 1.96% over the previous quarter. The report contains no explanation, attribution or discussion of this performance.

PERAC Conclusions

Based on the material reviewed, PERAC concludes:

1. The account value was determined solely by relying on monthly Mellon custodian reports and PERAC has received no information indicating that either the MRB or WIC made any attempt to confirm those valuations.

2. The record of WIC evaluating the performance of CFM indicates that no independent review was conducted by WIC but rather the firm relied exclusively on valuations from Mellon. In addition, it appears that no review of the account activity as accurately reflected in the Mellon custodian reports took place by the MRB or WIC. For some of the period of the account history CFM was also providing reports directly to the MRB. It does not appear that either the MRB or WIC analyzed those reports in depth. With the exception of the March 27, 2003 report, WIC reports to the MRB appear to have been general in nature with specific managers only reviewed if a determination to take some action with respect to that manager was to take place. The material reviewed by PERAC and responses from the parties contains no indication that any such report took place with respect to CFM.

3. The contractual terms obligate WIC to perform an assessment of current and prospective managers upon receipt of the agreement. In January 2002 an obligation existed for WIC to conduct an assessment of CFM, as it was providing services to the MRB at that time. In the material received from MRB no such assessment or analysis is mentioned, thus it appears that WIC did not conduct such an assessment of CFM, and the MRB did not require that WIC fulfill this obligation. Both parties in response to PERAC inquiries refer to the Mellon reports. The contract contemplates a different type of report focusing on matters beyond performance. No meeting appears to have taken place between the MRB and WIC at which a report as contemplated by the contract was made by WIC. Although such a report may not have uncovered the speculative nature of the CFM account activity, the failure to provide a report and the failure to require such a report represents a missed opportunity.

4. The information regarding CFM's compliance with the contractual guidelines was available to the MRB and WIC throughout the account history. The valuation of the portfolio holdings was only one indicator of the account activity. Other indicators clearly established that CFM was not in compliance. At no time did WIC recommend that MRB take any action relative to CFM in spite of the fact that CFM was in violation of its contract with the MRB and in violation of the supplemental regulation throughout much of the account history. CFM's style deviation began

in early 2000 with the writing of options. Speculation, not currency overlay, was being engaged in by CFM beginning in the spring of 2000 and accelerating throughout the history of the account. The MRB and WIC either remained unaware of these developments or acquiesced in CFM's deviation from the Contract and consequently never enforced the provisions in the MRB/CFM contract relating to watchlist, probation, and termination.

5. Major changes took place in the "process of investment". CFM did not specifically notify the MRB of this change, as required by the Contract. The MRB and WIC either failed to detect the change in investment process or acquiesced in that change and therefore failed to enforce this provision of the contract.

6. At no time did MRB seek regulatory approval for the type of investing that CFM was engaged in, particularly in the period after July 2001.

7. The minutes and other material provided by MRB do not reflect Board compliance with 840 CMR 16.07(3) relative to an annual determination that CFM continued to operate as required by contract. In the event that such a determination had been made each year, the possibility that the MRB and WIC would have uncovered the fact that CFM was engaged in speculation that was not consistent with the mandate contained in the MRB-CFM contract would have been enhanced.

Mellon Custodian Incentive Payments

During the course of the Investigation, PERAC became aware of payments made to Mahoney and others responsible for servicing the MRB custody account at Mellon for introducing CFM to Mellon FX.

In 2002, the BSDT Global Securities Services group submitted a *Client Service Incentive Plan Payment Request Form*. The document is entitled, *2000-2001 Client Service Incentive Plan Payment Request Form* and notes a sale date of January 1, 2001 and a start date of January 1, 2001. The services sold are delineated as "Foreign Exchange (Intro of Mellon's FX Dept. to Cambridge Financial)". According to the document, the products are "Foreign Exchange" and revenue was $1,625,400. A calculation multiplies this amount by .35 ("Margin") for a "pre-tax profit" of $568,890, which is then multiplied by 11% to result in a pool of $62,577. According to the document, it appears that amounts were requested for a number of employees, with the largest share ($18,400) that of Mahoney. A separate document appears to list the monies received pursuant to the request. This includes a total of $58,078. Mahoney received the largest amount ($17,000), with others receiving lesser amounts.

In response to PERAC inquiry, Mellon stated that the BSDT GSS group "received payments in relation to the introduction of CFM to Mellon FX for the years 1999, 2000 and 2001." In addition, Mellon stated that the group received no payment for 2002 and 2003.

Mellon in response to PERAC inquiry stated,

> "Boston Safe does not believe any of its employees specifically informed the MRB and/or WIC that Global Securities Services employees might receive compensation for introducing CFM to Mellon Bank, N. A."

Although PERAC has reviewed material that pertains to only the payments made in 2001 (the total of $58, 078 and the amount of $17,000 paid to Mahoney), Mellon indicated that such payments were also distributed for 1999 and 2000.

A string of emails in late 2001 and early 2002 reflect the importance of these payments to individual employees. It appears, that until this time, there had been some difficulty in accessing data about the CFM/MRB account with Mellon FX. Several emails seek information about the FX revenue generated by the CFM/MRB account for 2000 and 2001. CFM revenue was apparently not broken out between the clients involved on a monthly basis. An email dated December 20, 2001 from AJ Quitadamo to Bruce Shain relative to Cambridge stated that Cambridge total "P&L YTD 11/30/01" for Middlesex was $1,260,000.00.

Mahoney emailed Serra on December 20, 2001 stating,

> "This is really great news. Ron Christiansen called Bruce and I and notified us that they were having an excellent year with Cambridge Financial … I know Cambridge Financial very well through my numerous Board meetings with Middlesex. As you know, Wainwright Investment Counsel and I reviewed overlay managers with the Middlesex Retirement System back in July of 1999. The Middlesex Retirement System ended up hiring both AG Bissett and Cambridge Financial. I helped introduce both pieces of business to Mellon's Foreign Exchange Group (CFM and Bissett). Jim Kneafsey, President of Cambridge Financial was new to Mellon at the time and was unaware of our custody and foreign exchange capabilities … During the FX Campaign last year both of these managers were reviewed with A.J. Quitadamo. At the time Cambridge's options could not readily be traced back to Middlesex so we could not include their revenue numbers as part of the Campaign … this is a great success story for our business group and also reinforces the great working relationship we have with AJ and the rest of the FX Department."

According to an email written by Serra on that date,

> "Jim Mahoney was the CSO who hooked up Cambridge Financial with our FX desk via our Middlesex Retirement System relationship."

In responding to a series of questions relative to Mahoney's participation in MRB meetings regarding CFM or currency overlay, Mellon acknowledged that most meetings were attended by Mahoney and stated that BSDT's

> "participation in these meetings, if any, was limited to only those matters directly related to Boston Safe's role as custodian. Boston Safe's representative usually gave a short report during these meetings related solely to custody issues and might, on occasion, field questions related solely to custody issues."

The MRB meetings included April 16, 1998 at which WIC stated that presentations were being scheduled for the currency overlay program (Mellon stated "Mahoney does not believe he participated in discussions relating to currency overlay managers during" that meeting); May 14, 1998 in which presentations were made (Mellon stated "Mahoney did not participate…); June 18, 1998 at which Bisset and CFM were hired (Mellon stated "Mr. Mahoney does not believe he participated in discussions related to the hiring of CFM during the meeting…"); July 16, 1998 at which currency overlay was discussed (Mellon stated "Mr. Mahoney does not believe he participated in discussions relating to currency overlay during the meeting…); August 13, 1998 at which contracts were approved (Mellon stated "Mr. Mahoney does not believe he participated in discussions relating to execution of the MRB's contract with CFM during the meeting…); August 29,1999 in which monies were dedicated to CFM and the status of currency overlay was on the WIC agenda (Mellon stated "Mr. Mahoney does not believe he participated in discussions relating to the CFM allocation and currency overlay during the meeting…") and the July 19, 2001 meeting at which CFM made a presentation (Mellon stated "Mr. Mahoney does not believe he participated in discussions related to the CFM presentation …during the 7/19/01 MRB meeting").

Mellon was asked "Did James Mahoney review currency overlay managers with the MRB prior to the selection of CFM?"

Mellon responded "No. Mr. Mahoney did not review currency overlay managers with the MRB prior to the selection of CFM. Mr. Mahoney's involvement in the process by which the MRB and WIC reviewed, selected and carried on relationships with currency overlay managers was limited to only those matters directly related to Boston Safe's role as custodian. For example, the MRB meeting minutes for the October 28, 1998 MRB meeting … state "Mr. Mahoney addressed the issue of currency overlay regarding separate accounts for accounting purposes only."

Mellon also stated in response to PERAC inquiry whether Mahoney had recommended that MRB hire CFM, "No. Mr. Mahoney did not recommend that the MRB select CFM as a currency overlay manager."

The MRB, in response to PERAC inquiry as to whether Mahoney had reviewed currency overlay managers with the MRB prior to selection of CFM referred PERAC to the chronology of events from MRB minutes from March 18, 1998 to October 28, 1999.

Based on the material reviewed, PERAC concludes:

1. Mellon failed to inform the MRB that payments were made to individuals, including the primary services representative responsible for the custodian account with the MRB, for the introduction of Mellon FX to CFM.

2. The fact that those responsible for valuing the MRB account received payments for introducing Mellon FX to CFM raises the appearance of conflict between the duty that the custodian services group had to its client, the MRB, and its own interest in securing those substantial payments. Mellon officers and employees responsible for servicing the MRB custody account received substantial payments under an incentive plan for introducing CFM to Mellon FX. This arrangement raises an issue of conflict of interest between the duty owed to the MRB in providing custody services and the personal interest of the officers and employees in obtaining financial remuneration for such introductions. That arrangement raises the possibility that those officers and employees approached the CFM account differently from other MRB accounts. The perception was certainly created that, because of the incentive payments, the CFM account was different than other MRB accounts. It also created the perception that, regardless of whether a formal responsibility to do so existed, those officers and employees would be less likely to inform the MRB of problems, issues, or anomalies in the CFM account than would have been the case in the absence of such payments.

3. What role, if any, was played by Mahoney in the currency overlay selection process is unclear. Mellon responses to PERAC inquiries support the conclusion that he did not play a role. Although some aspects of the record support this, it is contradicted by Mahoney's own assertion that he "…reviewed overlay managers with the Middlesex Retirement System back in July of 1999."

4. In light of valuation issues and the counterparty status of Mellon FX, the relationship between Mellon FX and the custodian services group reflected in these emails and documents establishes that information as to the actual value of the CFM holdings resulting from trades with Mellon FX was readily available to the custodian group. In addition, during 2000 Mellon had an "FX Campaign" during which, according to Mahoney, the CFM account was reviewed with Arthur J. Quitadamo, Corporate FX Manager. The value of the portfolio holdings would seem to be a relevant topic for such a discussion.

Credit Line

The CFM contract states:

> "No direct loans or extension of credits to any interested party, except the line of credit received from the custodian bank, Mellon Trust."

Mellon identifies the mechanism that enabled CFM to trade as a Trading Limit and GS identifies that mechanism as an FX Limit.

At a MRB board meeting on October 22, 1998, WIC made a presentation relative to lines of credit and the CFM account. The MRB states that it did not vote to authorize such a line of credit and that questions about whether it existed and how it worked should be asked of WIC. WIC responded that it believes a credit line was put into place but that its implementation and use by CFM is a matter that CFM and Mellon as a custodian and counterparty are in a better position than WIC to describe. The MRB was unable to provide details of the presentation by WIC regarding the credit line and the WIC indicated that it reviewed with the MRB the purpose of the credit line and the parameters in the supplemental regulation. However, the meeting of October 22, 1998 occurred nine months before the PERAC regulatory process was completed thus the supplemental regulation could not have been a topic for that review. It should also be noted that this review took place before the incorporation of the Investment Guidelines into the CFM contract.

Otis stated, in response to a PERAC inquiry about the Mellon "credit line", that it was not really a credit line.

The MRB/CFM contract included a prohibition on margin purchases, or any other use requiring lending money. PERAC Regulation 840 CMR 21.01(1) also prohibits such trading.

Saul Stone and Company

CFM and MRB executed documents that established an account at Saul Stone & Company in October 1998 and August 1999. In documents received from BSDT/Mellon this is referred to as a margin account.

Activity in the Saul Stone account commenced in the fall of 1999 and included a series of transfers from Mellon beginning with a $40,000 transfer on October 14, 1999 and ending with the transfer of $20,000 on November 29, 2000. During that period a total of $255,000 was wired from Mellon to Saul Stone. Also, a notation on a document received from Mellon (untitled, undated and blank) states that in March 2001, $213,288 was written off per direction of Otis at CFM. The final balance indicated is $41,967.

Otis stated that the Saul Stone account predated the MRB engagement of CFM and that it was not a "margin account" as we understand it but rather an account to pay for trades. If more money was needed, CFM made a request of MRB/WIC. MRB/WIC would then instruct Mellon to transfer the money to the Saul Stone account.

The MRB stated that it did not believe that this was a margin account and that the MRB never authorized CFM to engage in this activity. However, Fahey on behalf of the MRB, executed a Customer Agreement with Saul Stone & Company that refers to a margin arrangement on several occasions.

PERAC Conclusion

Based on the material reviewed PERAC concludes:

1. The lack of knowledge about the establishment of the credit line and its use even at a date several months after the death of Kneafsey is unsettling and underscores the fact that neither the MRB nor WIC monitored the use of the credit line.

2. It is disturbing that the MRB is unable to provide a description of a presentation made to the Board at a Board meeting. PERAC regulatory action took place in July 1999 consequently WIC could not have described the relationship between that action and the credit line.

3. It is clear that the MRB did not understand how the account worked.

Cambridge Financial Management Trading Limits

The CFM account traded with several counterparties during its history. These included Fleet, Goldman Sachs (GS) and Mellon FX. In addition trades were executed through Saul Stone and Company. GS provided information to PERAC relative to the limits on trading it placed on the CFM account. In light of the role that Mellon played as custodian and the counterparty status of Mellon FX, PERAC received more material from Mellon FX. The following analysis is based on information received through that process.

Middlesex Retirement Board/Mellon FX Foreign Exchange and Options Master Agreement

On September 23, 1998 Mellon Bank N. A. and the Middlesex County Retirement System entered into a Foreign Exchange and Options Master Agreement (FEOMA) in which the MRB identified Bissett and CFM as Investment Managers. At the time the MRB had not completed the statutory and regulatory process necessary to invest through those firms. In fact, the MRB entered into the contract with CFM on October 15, 1998, not only in the absence of the completion of that process but subsequent to the MRB and Mellon entering into the FEOMA agreement.

Under the FEOMA the MRB,

> "represents and warrants to Mellon that each manager is authorized to enter into FX Transactions and Options hereunder, to execute and deliver Confirmations for FX Transactions and Options hereunder, to terminate, liquidate, and settle FX Transactions and Options hereunder, to amend, modify or supplement FX Transactions and Options hereunder, and to take all other actions under or in connection with this agreement or FX Transactions and Options hereunder, all on behalf of and as agent for the counterparty."

CFM had not contracted with the MRB when this FEOMA agreement was made. Mellon accepted the representations made by the MRB without requiring further documentary confirmation.

In response to PERAC inquiry Mellon FX stated that the FEOMA dated September 23, 1998 "contained specific account instructions regarding" CFM and other MRB accounts trading with Mellon FX. At the time the FEOMA was signed the MRB and CFM had not executed a contract thus the terms of that contract related to the authority and objectives of CFM were unknown. The specific contractual provisions governing, in large part, the management of the CFM account would not be in place until August 1999 when the Investment Guidelines were executed. For example, Mellon FX in response to PERAC inquiry states "… the FEOMA between Mellon FX and the MRB, signed by Mr. Fahey of the MRB authorized CFM to write options"; however, the Investment Guidelines prohibit CFM from writing options.

Also in response to PERAC inquiry, Mellon FX stated that at one point (apparently in 2001 from the context) Kneafsey told Mellon FX,

> "that the MRB had engaged CFM to trade in foreign currency options both for the purpose of implementing a hedging program and for the purpose of pursuing revenue enhancement. Mellon FX had no reason to question this, as it was consistent with the authority the MRB had bestowed upon CFM by virtue of the FEOMA."

Mellon FX, in responding to PERAC inquiry, cited a March 28, 2002 letter from Fahey to Pusateri which, in reference to CFM's authority, states that CFM is acting as a manger for the MRB "in particular to provide a currency hedging program for the Retirement System." The letter continues "In such capacity, the Retirement System has granted the Manager authority, among other things, to invest in U.S. dollars and foreign currency contracts as well as any put or call options on behalf of the Retirement System."

Mellon FX also stated that it did not receive a copy of the CFM Investment Guidelines from the MRB, WIC, or CFM nor did it obtain a copy of that document at any time. However, it also does not appear that Mellon FX requested such a copy. At the same time Mellon FX never received guidance from the MRB that limited the trading activity of CFM nor did it seek guidance concerning the trading activity of CFM. Mellon FX stated that the MRB did not communicate with Mellon FX about the trading activity in the CFM account during the period that CFM traded on behalf of the MRB. However, Mellon did state,

> "After Mr. Kneafsey's death, Mr. Fahey informed Mr. Christianson of Mellon FX that CFM was not authorized to write foreign currency options on behalf of the MRB.

However, this comment directly contradicted the written authority provided by the MRB to Mellon FX in the FEOMA. In any event, based upon Mellon's reasonable inquiry to date, Mr. Fahey's telephone conference with Mr. Christianson after Mr. Kneafsey's death was the only time the MRB alleged to Mellon FX that it intended for CFM to have less authority than granted in the FEOMA between Mellon FX and the MRB, signed by Mr. Fahey of the MRB …"

On September 1, 1999, Kneafsey executed a series of documents and submitted them to Mellon Bank N.A. One of these is a "Foreign Exchange Trading Authorization" sent to Arthur J. Quitadamo, Corporate FX Manager. Kneafsey states that, in entering FX Contracts, Mellon may rely on this letter. The letter also states,

> "We maintain a duly authorized, written contract with each client which provides that we may determine what investments shall be purchased, held, sold, or exchanged by the client, what related FX Contracts shall be entered into by the client, and that we may place all orders for the purchase and sale of portfolio investments and related FX Contracts for the client's account with brokers or dealers or banks selected by us. We hereby advise you that orders for FX Contracts that are placed with you on behalf of any client are authorized by the terms of the applicable management contract and are consistent with the investment objectives of that client."

That was not the case as we have seen throughout the trading history of CFM with Mellon. The writing of options was prohibited by the contract between the MRB and CFM as was speculation. The supplemental regulation governing the activity of the MRB and CFM imposed strict limits on the writing of options in the event that such activity was contractually permissible and also prohibited speculation.

PERAC Conclusion

Based on material reviewed, PERAC concludes:

1. The MRB entered into an FEOMA Agreement with Mellon FX dated prior to entering into an agreement with CFM and prior to the completion of the regulatory process. This was not in compliance with good practice.

2. Similarly, Mellon FX entered into an FEOMA Agreement with the MRB prior to the date that CFM had been contracted by the MRB.

3. The MRB did not provide the contractual guidelines pertaining to the CFM account to Mellon FX.

4. Mellon FX did not request that the MRB provide it with a copy of the contractual guidelines pertaining to the CFM account.

5. Mellon FX relied on CFM's statement of its authority and did not seek confirmation of that statement from the MRB. This included the statement,

"We hereby advise you that orders for FX Contracts that are placed with you on behalf of any client are authorized by the terms of the applicable management contract and are consistent with the investment objectives of that client."

6. In March 2002 Mellon FX was informed by Fahey that CFM had authority "to invest in U.S. dollars and foreign currency contracts as well as any put or call options". However, Mellon FX was also informed that CFM was providing the MRB with " a currency hedging program". That objective contradicts assertions made by CFM to Mellon FX that its authority included revenue enhancement.

Mellon FX Trading Limits

In conjunction with the establishment of a counterparty relationship, Mellon FX establishes customer dealing limits. Similar limits are created by other national banks for their protection. Goldman Sachs, another counterparty on trades made by CFM on behalf of the MRB, also created foreign exchange limits with respect to the CFM account.

Mellon FX adopts a flexible case-by-case approach to these limits and according to Mellon FX, "As a policy, Mellon FX does not disclose to its customers, in whole or in part, its internal customer limits." A foreign exchange operating system assesses actual trading against the customer dealing limits for that customer. Exception reports are generated and forwarded to an independent control and compliance unit. That unit notifies credit and business personnel. Credit officers may approve trades that exceed limits based on an assessment of the counterparties creditworthiness. In the event that the customer is a custody client of Mellon the decision is "largely based on the net values of assets in custody." However, Mellon FX also indicated that limit increases are "approved largely on the basis of the types and values of the customers' assets."

According to Mellon "customer trading limits" are an internal matter designed to address two types of risk with respect to foreign exchange agreements. The first is pre-settlement risk. This is the risk of counterparty default on an exchange transaction in which the counterparty is obligated to either deliver to Mellon FX a currency which has appreciated against the U. S. dollar during the term of the agreement or deliver a payment to Mellon FX in exchange for receipt of a currency that had depreciated against the dollar during the term of the agreement. Mellon states,

> "Limits are established ***based on expected customer needs*** judged against the customer's creditworthiness." (emphasis added)

Customer dealing limits are not communicated to the customer. The second type of risk Mellon FX defines as one day exposure, " … the amount of transaction payments a counterparty has agreed to pay Mellon on any single day." Parties to a foreign exchange contract settle the contract by making payment prior to the receipt of the other party's payment. If the counterparty failed to pay once Mellon had made payment the full amount of the contract would be a loss. These limits are also

> "established ***on the basis of need*** and ability to meet obligations to support 'as-offered, as-available' transaction activity and are not communicated to customers." (emphasis added)

> "Both pre-settlement and single day settlement risk are compared as a total to customers' account NAVs."

In short the limits are based on an assessment of the creditworthiness of the counterparty weighed against the "expected needs" of the counterparty. Consequently, Mellon FX, in establishing limits on the CFM account, assessed the "expected needs " of the MRB against its creditworthiness. As noted above Mellon FX made this judgment without knowledge of the contractual guidelines regarding the CFM account.

Throughout the history of trading with CFM/MRB Mellon FX continued to increase CFM/MRB limits in spite of the fact that the NAV of the account was decreasing and in a major loss position. However,

> "In the case of customers who utilize Boston Safe's Custody Services, again this judgment is largely based on the net value of assets in custody".

Pre-settlement risk is the "sum of the current market value appreciation on currencies Mellon FX has bought for the customer and a credit equivalency (CE) component which estimates potential future exposure arising from exchange rate changes that could occur over the transactions' remaining lives." Although this is a measure of the risk that the customer will not fulfill its responsibilities, it also indicates that such risk is offset by the deterioration of the market value of the CFM account. This could support a decision by Mellon FX to increase the CE limit as Mellon had benefited from market value appreciation and Mellon's future exposure was limited as the options were already well "in the money."

Mellon FX states,

> "Proposals for limit increases with respect to institutional customers such as the MRB are approved largely on the basis of the types and values of the customers' assets."

This raises several issues. This implies that the portfolio value and asset types are the basis for limit increases. Although Mellon responses focus on the overall MRB portfolio the clearest indicator of risk with respect to the Mellon/CFM trades was the value of those holdings. Throughout much of the trading history, CFM and MRB, in contrast to the reported NAV, were actually incurring significant losses, and the NAV of the CFM account was substantially negative and deteriorating. In addition, in order to assess limit increases, according to Mellon FX, the value of the MRB portfolio, including the CFM account were determinative. Presumably the source of those values was the custodian valuations of the MRB accounts. Mellon FX then should have had access to and knowledge of the valuation of the CFM account according to the custodian analysis. The discrepancy in that value should have alerted Mellon FX that a problem existed and led to a review of the valuations and a curtailing of limit increases. For example, on March 31, 2003 the custodian valued the CFM account at $ +1.6 million while the value of the trades that CFM was counterparty to Mellon FX was $ - 18 million. CFM, at least with respect to the losses incurred due to trading with Mellon FX, was able to trade in amounts that were permitted by the Mellon FX trading limits that had been increased in spite of the fact that Mellon FX knew or should have known that valuations by the MRB's custodian were inconsistent with the values that Mellon FX knew were accurate.

PERAC Conclusion

Based on material reviewed, PERAC concludes:

1. The process outlined by Mellon FX establishes that Mellon FX was well aware of the value of the MRB portfolio and the CFM account as it assessed the CFM trading limit. Under Mellon's procedures such an assessment would appear to require that interaction take place between Mellon FX and Mellon Custodian Services.

2. Mellon FX established the customer trading limits applicable to the CFM account without reviewing the needs of the MRB as outlined in the contract between the MRB and CFM.

3. PERAC has not received information relative to how Mellon FX assessed the needs of the MRB, however, the limits that were established were not consistent with those needs as delineated by the MRB/CFM contract and the PERAC Supplemental Regulation.

Original Mellon Foreign Exchange Limits

In conjunction with the selection of Mellon as custodian in 1995, an "Underwriting and Approval Form" was executed internally at Mellon. It indicates that business was originated by the Boston Foreign Exchange on June 27, 1995 with the MRB as a client and establishes foreign exchange limits. The "FX CE Limit" is established at $10 million and the Daily Settlement Limit (DSL) is set at $30 million. It is estimated that the $40 million limit is 12.9% of net assets of the MRB. In the risk profile section it states that the MRB uses options and forwards "for hedging only".

February 2000 Trading Limit Increase

CFM began trading in September 1999 and within six months, because it was exceeding its daily settlement limit, Mellon FX increased those limits.

In February of 2000, an "Underwriting and Approval Form – Foreign Exchange Limits Request" was executed internally at Mellon. That form indicates that the MRB is a counterparty; that the relationship was originated by a D. Rector on February 4, 2000 and that the custody client service officer is James Mahoney. The MRB net assets are stated as $545.2 million. The increase is from $40 million to $75 million (FX CE limit from $10 to $15 million and the DSL from $30 to $60 million). The combination as a % of net assets increased to 13.9%.

In the comments section it states,

> "Counterparty is exceeding its DSL limit due to a forward hedging strategy."

In the risk profile section it states that the custody agreement contains "OD Language" and "FX Language".

October 2001 Trading Limit Increase

The limits established in February 2000 remained in effect for the next 21 months. In October 2001 increases took place because CFM was trading above the CE and the DSL limit.

In October of 2001, an increase is authorized with the comment,

> "Counterparty currently trading above CE and DSL limit (high trade approximately $63.0 MM.)"

The increase is CE from $15 million to $20 million and DSL from $60 million to $75 million. The total increases from $75 million to $95 million or 17.6% of the MRB net asset value.

In response to PERAC inquiry, Mellon stated that it "did not notify Boston Safe personnel in this case that the MRB was 'currently trading above the CE and DSL limit … ' nor was such notification required."

December 2001 Trading Limit Increase

Within three months a further increase was established because of the need to borrow for trading.

In December of 2001, a further limit increase was authorized: CE from $20 million to $80 million and DSL from $75 million to $160 million. This represented 44.1% of the MRB net asset value.

The comment section states,

> "Peak CE and DSL trade activity has increased due to borrowing for forward options trade activity."

An e-mail from Renee Smith to Robert Steiner dated February 28, 2002 states,

> "Per our conversation FX Credit increased FX and FXS limits to assist give (sic) you more 'borrowing' capacity for options trading. (Pgh) increases are as follows: Middlesex County was increased to FX (CE) $79 million from $19 million FXS(DSL) $157 million from $72 million. I presume you and the trader from whom you borrow will need to decide what your cub limits will be (OFC and OFS in GLMS) …"

Mellon, in response to PERAC inquiry, confirmed that this was the limit in place during the 2001 to 2003 period. Mellon also stated that as Kneafsey had informed them that CFM had received authorization from the MRB to pursue revenue enhancement, in addition to running a currency overlay program. The fact that limits were far in excess of the equity that CFM was supposed to protect was, in the view of Mellon, not "relevant to the establishment of the MRB's customer dealing limits."

There is no indication that Mellon FX sought to confirm this with the MRB or that Mellon FX noted or acted upon the fact that Kneafsey's statement is contradicted by the original "Underwriting and Approval Form" executed internally at Mellon. In the risk profile section the initial form states that the MRB uses options and forwards "for hedging only". Thus the original "Underwriting and Approval Form" specifically states that the MRB uses options and futures solely for hedging purposes and makes no mention of revenue enhancement.

Also, in response to PERAC inquiry, Mellon stated that Mellon FX policy and controls "permit customer dealing limits to be established" that approach 50% of the value of the MRB's total portfolio.

Goldman Sachs Trading Limits

A review of material provided by GS indicates a similar pattern of increases in what the documents refer to as "FX Limit".

The first relevant emails provided are dated November 15, 2000 and make reference to limits.

On December 28, 2001, reference is made to a "limit bulge" and an "increase & temp fx limit thru 11/29/02 to accommodate business thru Cambridge Fin Mgmt". The comment section states that Assets Under Management (AUM) at March 30, 2001 according to Kneafsey was $74 million. The currency hedging program as of February 21, 2000 referenced $44 million.

The comments also state,

> "4/2/01 -- I spoke to Jim at Cambridge who confirmed that this is still strictly an overlay program. They do use leverage but very limited. Options only – never net short. Trying to be 100% hedged."

On March 21, 2002 a GS document references an increase in the FX limit through CFM. In the comment field it states,

> "Limit increase based upon assets under management and reputation and comfort of advisor."

On May 23, 2002 a GS document a need to increase the limit due to "a bulge line to cover existing trades". In the comment field it states, " Ed Conway okayed bulging FX line to cover existing trades. Limit increased based upon the assets under management and reputation and comfort of the advisor."

MIddlesex Retirement Board Comment

Fahey indicated that the MRB was unaware of the manner in which CFM used the trading limit provided to it by Mellon and Goldman Sachs.

PERAC Conclusions

Based on material reviewed, PERAC concludes:

1. In trading with CFM, Mellon FX regularly increased trading limits and thereby enabled CFM to trade in amounts that far exceeded what would be expected for the mandate in the MRB/CFM contract. In several instances, trading limit increases were necessitated by CFM exceeding existing limits by significant margins.

2. Based on material reviewed and responses to PERAC inquiries MRB was unaware of the trading limits on the CFM account or any action taken by Mellon in relation to those limits. Mellon FX did not inform or communicate with the MRB or WIC concerning the limits. The record indicates that CFM was consistently exceeding trading limits that were established and Mellon FX increased those limits without communicating with the MRB, the party with whom Mellon FX had an existing FEOMA agreement.

3. In trading with CFM GS on several occasions increased foreign exchange limits and thereby enabled CFM to trade in amounts that far exceeded what would be expected for the mandate in the MRB/CFM contract. In several instances foreign exchange limit increases were necessitated by CFM exceeding existing limits.

4. Based on the material reviewed the MRB was unaware of the fx limits on the CFM account or any action taken by GS in relation to those limits. GS did not inform or communicate with the MRB or WIC concerning the limits. GS documents indicate that CFM on several occasions exceeded foreign exchange limits that were established and GS increased those limits without communicating with the MRB, the party with whom GS had an existing FEOMA Agreement.

5. The credit capacity established by these limit increases supported the frenetic trading activity that CFM engaged in from late 2001 to March 2003. It is during this period that the losses to the MRB dramatically increased.

Conclusion

In conducting its review of the MRB/CFM matter, PERAC has, to the best of its ability, sought to avoid allowing certain actions or inaction to be assessed solely on the basis of the result. That result, a significant loss of assets, came about because of numerous factors and, as is always the case, hindsight is perfect.

Although the false prices that CFM submitted to Mellon and that, subsequently, formed the basis of Mellon reports to the MRB and WIC, masked the losses that CFM was incurring those losses were clearly the result of trading activity that was not currency overlay.

The account limits embodied in the PERAC Supplemental Regulation and the MRB/CFM contract and reflected in the statements by CFM to the MRB, are reasonable, responsible and prudent. The problem arose in the failure to realize that those limits had been violated and to enforce those limits.

The CFM account management deviated considerably from the mandate originally set forth in the contract between the MRB and CFM. Ultimately, the level of speculation that took place resulted in significant losses to the MRS.

The MRB retained CFM on the basis of it performing currency hedging. It appears that in early 2000 the MRB and WIC were aware of the fact that CFM was beginning to write options. WIC has stated that Aristizabal warned the MRB that the result of the writing of options was to increase the risk of loss substantially. No longer is the "outstanding advantage of the Cambridge options approach … that the risk is limited to the purchase price of the options" relevant. In light of that change in strategy, as well as the warnings of Aristizabal, the need for the MRB to closely monitor the account dramatically increased.

It is clear that the MRB, in monitoring the CFM account, failed to abide by PERAC Regulations, did not employ best practices and as a result the possibility of discerning the true picture of what was transpiring in the CFM account was diminished. The MRB did not require direct reports from CFM, did not meet with CFM after 7/01, did not make an annual determination of CFM compliance with its mandate and did not review transaction and brokerage costs. In addition, the MRB did not insist on an assessment of CFM by WIC as required by the contract between WIC and the MRB and did not require various reports by WIC to the MRB regarding the CFM account. Thus, although the Mellon reports and the values reflected in those reports may not have indicated that the overall account was incurring severe losses, the odds of uncovering the actual state of the account were limited by the MRB's failure to use other tools such as direct reports from CFM that were available to it.

At the same time, it must be recognized that the sine qua non that enabled CFM to trade in the manner it did was the fact that false portfolio valuations were provided to the MRB. The MRB appears to be guilty of sins of omission rather than sins of commission. The fact that CFM perpetrated the fraud in account management and in reporting of prices is the real source of the loss that the MRB incurred.

The structure put into place by the MRB is similar to that used elsewhere by private and public pension plans. It included retaining experts to advise and to invest for the Board. The retention of an investment consultant, a custodian, an investment firm and a performance analysis vendor was a prudent course of action. The MRB did not act in an unreasonable manner in relying on the Mellon custodian reports and the Russell Mellon performance reports in assessing whether the account was, on a net basis, achieving gains or losses.

In reviewing these reports the MRB relied on WIC. This is customary in the pension management area and is one of the primary reasons for hiring a consultant. Throughout the period the MRB received reinforcement in the view that nothing was amiss from the custodian reports, the performance reports and the fact that its consultant, beyond the mention of the risk associated with writing options, did not indicate any concerns relative to the CFM account.

The MRB/CFM matter is a cautionary tale for all who are responsible for the investment of pension funds. It is clear that, in certain rare circumstances, devastating losses can be incurred even when the investment strategy that is purported to be followed has no history of such losses taking place.